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CONTAINING ANNUAL MESSAGE
OF THE PRESIDENT OF THE UNITED STATES
TO THE TWO HOUSES OF CONGRESS

63D CONGRESS, 3D SESSION

WITH REPORTS OF DEPARTMENTS
AND SELECTIONS FROM ACCOMPANYING
PAPERS

IN TWO VOLUMES

VOL. II

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WASHINGTON

1915

THE ABOLITION

1814

CONTAINING ANNUAL REPORTS
OF THE MEMBERS OF THE EXECUTIVE
IN THE HOUSE OF REPRESENTATIVES

WITH REPORTS OF THE
AND SELECTED CASES



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REPORT

OF THE

SECRETARY OF THE NAVY.

NAVY DEPARTMENT,
Washington, December 1, 1914.

To the PRESIDENT:

SIR: I have the honor to submit herewith the annual report of this department for the fiscal year ended June 30, 1914, including operations and recommendations and estimates to date.

The Navy was not neglected in the unparalleled record of constructive legislation made by the second session of the Sixty-third Congress. That forward-looking body evinced a true appreciation of the country's real need for a continuously healthy and normal growth of the Navy; and the legislation it enacted approved nearly every recommendation made in the department's report of last December. As a result of the ready spirit and wise discrimination of that Congress, the naval appropriation bill, decreased below last year's figures, provided for two dreadnaughts instead of one, and, later in the session, seizing upon a rare opportunity, Congress authorized the sale of two old ships, ill-adapted to the present needs of our Navy, and the construction in their stead of a powerful dreadnaught.

The second session of the Sixty-third Congress has, therefore, to its credit the authorization of three new dreadnaughts. In addition to these new dreadnaughts, there were authorized six torpedo-boat destroyers and eight or more submarines, one of which is to be a sea-going vessel, the first of its kind. The estimates for the short session call for an increase embracing dreadnaughts, destroyers, and submarines, and likewise for other craft needed. These estimates have been prepared with consideration for the needs of the service and the necessity for economy which the rigors of foreign war have imposed upon our national budget. These recommendations granted, the increase will be noteworthy and will give us a well-rounded Navy equal, if not superior, to that of any Navy in the world, ship for ship and man for man.

The past year in the Navy affords gratification to all who take pride in its growth, strength, and usefulness. In every line of

progress and achievement it has demonstrated its steady advance and efficiency. For the first time in many years the enlistment is up to the limit prescribed by Congress. The present enlistment is 52,667, or 4,612 greater than in 1913, and so attractive has the service become to the youth of the land that it has been possible to have a waiting list, and it is a fact that picked men alone, of exceptional qualities, mental and moral, and of fine physical type, are now admitted; for out of 88,913 applicants for enlistment 13,780 new men were accepted. Not only is the Navy up to its prescribed quota as to numbers, but the popularity of the service renders unnecessary strained or unusual methods to attract a sufficient number of young men. The welfare of these young men who are so freely offering themselves for their country's service has been by no means neglected. As will appear hereafter, their pathway to the Naval Academy, the Line, and the Pay Corps has been facilitated, and their physical comfort has been materially improved. Their avenues of promotion are not as numerous as they should be, or as they will be. It must be true in the American Navy that every sailor carries an admiral's flag in his ditty box, as Napoleon said it was true of the army of France, that "every soldier carries a marshal's baton in his knapsack." The conviction is strong and growing stronger in the Navy that the best discipline is promoted by friendly relations and mutual understanding between officers and men. This is but a world-wide truth and was recently voiced by President Poincare of France, when he said: "There is being established between the commanding officers and the men a confidential intimacy which, far from undermining discipline, ennobles it further by an enlightened consciousness of solidarity in devotion and sacrifice."

From the highest rank to the newest recruit there has been manifested a spirit of comradeship and cooperation and ambition. These essential qualities are seen and felt in every line of effort—whether under fire at Vera Cruz; at target practice where the steady hand and the quick brain are indispensable; in aeronautics, which have realized the dream of Tennyson—

Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down the costly bales;
Heard the heavens fill with shouting, and there rain'd a ghastly dew,
From the nations' airy navies grappling in the central blue;

in the submarines, where Jules Verne's vision of "Twenty Thousand Leagues Under the Sea" has been translated from the realm of fiction to the realm of fact, and become a record of everyday work of the Navy in action; in the schoolroom or the workshop; walking the deck or manning the gun, or conquering the currents of the air by wireless. In a word, in every activity of our many-sided service,

officers and men have risen in splendid performance of duty to add new glory and new luster to our Navy, which, from the days of Paul Jones and Barry to those who fought at Vera Cruz, has won glory, more by restrained self-mastery than by aggressive display of courage.

It is thus seen that in increase of personnel and in material 1914 has strengthened the force and the power of the Navy. With the authorization by the Congress, shortly to convene, of a program as progressive as at the session which closed in October, the Navy will be stronger, relatively and actually, than at any period of our history.

ESTIMATES SHOW REDUCTIONS.

The appropriations for the fiscal year 1914-15 for the Naval Establishment amounted to \$140,233,716.61, exclusive of the \$4,635,000 appropriated from the proceeds of the sale of the battleships *Idaho* and *Mississippi* for the battleship authorized in their stead. Estimates submitted for the Naval Establishment for the fiscal year 1915-16, exclusive of the amount required to continue work on the vessel authorized to replace the *Idaho* and *Mississippi* (\$5,827,410), amount to \$139,569,409.88, or \$664,306.73 less than the 1915 appropriations, and this reduction has been made notwithstanding advances recommended in the appropriations "Pay of the Navy" and "Pay of the Marine Corps" of \$1,359,839 and \$149,284.47, respectively, to meet the normal increases already authorized by law in these two arms of the service.

The policy has been, as it was a year ago, to save ashore for expenditure afloat; to maintain shore stations for the fleet, and not the fleet for shore stations. The biggest reduction made was for "Public Works," for which the aggregate of the estimates of the several yards and stations was \$10,381,869. These estimates were reduced to \$2,777,816, or \$697,684 less than the appropriations for 1915. In the big working appropriations "Construction and Repair" and "Steam Machinery" it was felt that the apparent balances under them for 1914 justified reductions aggregating \$700,000. A reduction of \$241,657 in the estimate for the Bureau of Navigation is due largely to reenlistments and large savings by wise action in transportation expenses, in the face of an increase of 4,600 men. Cognizance was also taken of the authority in the naval appropriation act for 1915 allowing actual credits to be made to the appropriations concerned for stores, equipage, and supplies turned in from ships and ships' equipage turned in from yards and stations, and the estimates for various appropriations were reduced by the estimated amount of these actual credits during 1916—in round numbers, \$249,000. Briefly stated, excluding "Pay of the Navy," "Pay of

the Marine Corps," and "Public Works," the estimates submitted for appropriations for the maintenance of the Naval Establishment in 1916 are \$2,222,403.20 less than the appropriations for 1915.

DID NOT SPEND ALL APPROPRIATED.

In the economical administration of the department no dollar has been expended because it was appropriated, but there has been a zealous effort to bring the expenses of the department below the estimates, and to conduct it upon less than the sums appropriated. The success of such efforts is seen in the fact that of the money appropriated the following unexpended balances in excess of \$100,000 (smaller balances are not given) are shown for the fiscal year ended June 30, 1914:

Transportation, Navigation-----	\$176, 643. 56
Construction and Repair-----	1, 030, 123. 81
Equipment of vessels (Construction and Repair)-----	433, 296. 46
Steam machinery-----	446, 347. 27
Equipment of vessels (Steam Engineering)-----	230, 699. 60
Equipment of vessels (Supplies and Accounts)-----	110, 429. 06
 Total -----	 2, 427, 539. 76

THE BUILDING PROGRAM.

The building program recommended this year differs little from the recommendations in last year's annual report. It is a "well-balanced program." The construction of the following is included in the estimates:

- Two dreadnaughts,
- Six destroyers,
- Eight submarines or more, one to be of sea going and seven or more of coast-defense type,
- One gunboat,
- One oiler.

The estimates were made prior to the 15th of October, as required by law. They follow the policy recommended by the general board but reduce the number of ships. Recent developments in naval warfare have strengthened faith in the efficacy of the submarine. The department urges, therefore, the construction of an increased number of submarines and the larger utilization of this weapon of warfare which has demonstrated its effectiveness. There are many (very many more than a few weeks ago) who believe the time has come when the advice of Sir Percy Scott should be taken. Months ago that able English officer declared that the submarine was the most effective ship of the navy of the future and advised a cessation in the rapid construction of dreadnaughts and the utilization of the money thus

spent in building large numbers of submarines. The lay mind has accepted this view of the policy, but the trained naval officers making up the general board are convinced that, while the submarines have a large part to play in naval warfare, they do not replace the larger craft, and the board makes recommendation to the department for an increase in the Navy, embracing four dreadnaughts and the usual complement of destroyers, submarines, and auxiliaries. These naval statesmen hold to the opinion that the dreadnaught remains the central and chief fighting force of a well-proportioned navy.

The General Board reiterates the opinion it has always held that "command of the sea can only be gained and held by vessels that can take and keep the sea in all times and in all weathers and overcome the strongest enemies that can be brought against them." It declares "other types are valuable and have their particular uses," but "the backbone of any navy that can command the sea consists of the strongest seagoing, sea-keeping ships of its day, or, of its battle-ships." The opinion of the General Board as given in its annual report (Appendix A. p. 53), based upon study, investigation, and observation, is entitled to great weight. The department feels that it is upon safe ground in looking to the Board to prescribe the character of the ships to be constructed. The large increase in submarines is most desirable, but nothing in the present war has disproved their faith in the modern dreadnaught. The fact that there has been no encounter between these powerful ships does not justify the conclusion that their further construction should be discarded in favor of the smaller craft which has astonished the world by its ability to sink cruisers and other craft, giving its severest and most fatal blows before its presence is discovered. It may be that naval engagements later on will teach lessons that will change expert opinion, but as long as the bulk of the ablest naval officers believe the increase of the Navy should embrace, in fair proportion, the dreadnaught, the destroyer, and the submarine, the Secretary would not feel warranted in recommending a widely different program of construction. However, in view of the demonstrated power of the submarine, I would impress upon Congress the importance of making a larger increase in the submarine craft, appropriating generously therefor without reducing the appropriations for other craft. The estimates for these were reduced to the minimum. That our Navy has not neglected the construction of submarines will be seen by a comparison of our strength in this craft with that of foreign navies. It is roughly estimated that there are built or building for the various navies the following number of submarines: England, 84; France, 76; United States, 51; Germany, 31; Japan, 17. This estimate was made in July of this year.

When the relative sizes of the fleets of the great nations enumerated above are considered, it will be seen that the United States has a submarine flotilla relatively and actually very powerful. England's fleet is more than twice as great as ours, yet she has but little more than half as many more submarines. France has a considerably larger submarine fleet than ours, with a smaller navy, but she has in the past taken the lead in submarine building. Some years ago she abandoned the dreadnaught policy to acquire large numbers of submarines, but in the last two or three years has made unusual exertions to repair her deficiency in dreadnaughts. England has overcome this lead, and we are on that road, having in addition to the 51 ships already mentioned 8 or more authorized by last year's bill, on which work will shortly commence, and we are asking for 8 or more this year, which will swell our total to at least 67 in the next three years. Germany, with a larger fleet than ours, has less submarines, and Japan, with a fleet smaller than ours in strength, only half as many submarines. What we have done, however, in submarine construction is but an earnest of what must be done in the future. When we shall have a division of seagoing submarines in commission, we will have added to the battleship fleet a strong fighting unit which must be of large importance in any over-sea operations.

As far as the submarines themselves are concerned, it is believed that ours are on a par with any in the world. The development of our types has been logical, and in each new type the ideas and comments of the officers and men who operate the submarines in service have been considered. In the appropriation made by the last Congress two types for the first time were included—one of high surface speed, to accompany the fleet, and one for coast and harbor defense. In the building of two such distinct types we are in accord with what foreign countries are doing, and submarine flotillas in the future will probably be composed of vessels of these two types.

Recommendation is made for the construction of an additional oil ship and a gunboat, both of which are urgently needed. A transport and a supply ship are building, and the demand is chiefly for ships that have the highest military value. Auxiliaries can in need be purchased, but it is a matter of years to construct fighting ships. Economy should be practiced, therefore, at this time in auxiliary craft.

INCREASE IN EFFECTIVE FORCE.

Since June 30, 1913, the effective force of the Navy has been increased by the completion of vessels building under contract and at navy yards, as follows:

Battleships *Texas* and *New York*; torpedo-boat destroyers *Cassin*, *Duncan*, *Cummings*, *Aylwin*, *Benham*, *Parker*, *Balch*, and *McDougal*;

submarine torpedo boats *H-1*, *H-2*, *H-3*, *K-1*, *K-2*, *K-3*, *K-4*, *K-5*, *K-6*, and *G-4*; fuel ships *Proteus* and *Nereus*; gunboats *Monocacy*, *Palos*, and *Sacramento*.

The battleships *Texas* and *New York* are the first vessels of the United States Navy to be armed with 14-inch guns. With speeds in excess of 21 knots and with heavy armament and armor, they form a very effective addition to the first fighting fleet.

The three battleships already referred to as authorized by the preceding session of Congress will carry as heavy armor and as powerful armament as any vessel of their class; they will be 600 tons larger than the *Pennsylvania* and *Arizona*; they will carry a secondary battery so arranged as to be available for defense against torpedo-boat destroyers irrespective of any condition of weather. To them the names *California*, *Idaho*, and *Mississippi* have been assigned, and they will be known as the *California* class. Following the policies inaugurated in the past year, the fullest possible provision will be made to secure the maximum comforts for the crew. A crew's reception room, wherein members of the crew can receive the members of their families and other guests, will be provided, and, similar to the provisions now existing for officers, laundries will be installed for the use of the crew.

Anticipating congressional provision of battleships, the design bureaus of the department proceeded with their design work, and on August 1, 32 days after the naval appropriation bill became a law, issued plans and specifications for these vessels. Never before in the history of the new Navy have battleship plans been issued in such brief time following enactment of the naval appropriation act. As a result of competition, the contract for the *Idaho* was awarded to the New York Shipbuilding Co. under the department's plan of turbine propelling machinery and boilers, for \$7,250,000. The contract for the *Mississippi* was awarded to the Newport News Shipbuilding & Dry Dock Co. under said company's design of Curtis turbines, for \$7,115,000. The construction of the battleship *California* will be assigned to the navy yard, New York.

It will therefore be noted that these vessels, although of 600 tons greater displacement than the *Pennsylvania*, will be obtained in the case of the *Idaho* for \$10,000 less money than the smaller ship and in the case of the *Mississippi* for \$145,000 less money. The contract price for the *Pennsylvania* was \$231.21 per ton of displacement. Had the contracts for the *Idaho* and *Mississippi* been placed at the same cost per ton of displacement as the *Pennsylvania*, the cost of these two vessels would have been \$432,440 more than the contracts actually made.

THE NAVY OF THE AIR.

When the fleet was ordered to Mexican waters in April, in connection with the occupation of Vera Cruz, two aeroplane sections of two aeroplanes each, completely manned and with full outfits, were sent on board the *Mississippi* and *Birmingham* to Vera Cruz and Tampico, respectively. There was no occasion for the use of aeroplanes at Tampico. Those at Vera Cruz were used continually, and although the Navy's aeroplanes are not fitted for land work, for 43 days they did a good deal of scouting over the trenches protecting Vera Cruz. There were daily flights without regard to weather or other conditions. To every call made upon them our young aeronauts made ready and cheerful response, and their forethought and caution prevented any accidents. Their scout work in the sky assured the Commander-in-Chief that no mines had been planted, enabled him to locate sunken works, and was of inestimable value in the combined operations of the Army and Navy. The heavy toll that must be paid for progress in all invention calling for daring has resulted in the death this year of one air pilot, Lieut. J. D. Murray, United States Navy. His name will be remembered among the immortals who have given their lives to the development of aeronautics. He was an efficient officer, courageous in life, mourned in death.

Air craft have demonstrated in the present war in Europe that no military arm is complete which lacks them. They will not replace vessels of war, but will extend the field of operations to the air as well as on the surface of and underneath the water. The recent wars have demonstrated the inestimable importance of scouting, and the day is not far distant when a modern Maury will chart the currents of the air as that great naval officer charted the currents of the ocean. Air craft on the land prevent surprises of the character which have determined most military victories. They provide the best means for discovering submarine mines, and have now become an indispensable naval adjunct. We are but in the infancy of air craft. The development in the manufacture of these craft in this country needs to be stimulated, and the success of this arm of the military service abroad will be a mighty stimulus to American manufacturers.

Early in the year a board of experienced officers was appointed by the Secretary to consider and make recommendations for the development of aeronautics in the Navy. After a thorough investigation this board recommended the establishment of an aeronautic station at Pensacola, Fla., the organization there of a flying school for officers and men in the art of aerial navigation and the purchase of certain types of aeroplanes and other flying craft. Orders were given, early in the year, for some foreign-built aeroplanes, in addition to larger orders for aeroplanes made in this country. The pur-

pose of ordering abroad was to enable the aeronautic school to test out the best foreign designs in construction and equipment, to the end that the Navy might adopt those which had demonstrated themselves by actual trial to be best fitted for the service. Unfortunately, the war made it impossible for the orders placed abroad to be filled, and the trial of such craft must be postponed. The best types of American manufacture have been ordered, and the department will develop this modern branch of the naval service steadily and rapidly. Indeed, it has been more ready to develop it during the past year than the manufacturers of this country have been to supply the demand for craft of approved design. It is recognized that we are but on the threshold of the development and utilization of air craft, and their steady increase on a large scale is a fixed policy of the department.

A volunteer militia, if it may be so called, has been organized by the owners of air craft, and has been patriotically placed at the command of the Navy Department if times of peril should call for its assistance to the regular airship flotillas.

THE LAW AND THE PROFITS.

The naval act of 1914 provides that no part of the money appropriated shall be used "to procure through purchase or contract any vessels, armament, articles, or materials which the navy yards, gun factories, or other industrial plants operated by the Navy Department are equipped to supply, unless such Government plants are operated approximately at their full capacity for not less than one regular shift each working day." Three exceptions are made—the first, "except when contract costs are less than costs in Government plants"; second, "except when Government plants are unable to complete the work within the time required"; and, third, "except in cases of emergency."

This injunction of the law that nothing should be bought in the markets which could be made by the Navy itself has been observed with a conscientious scruple in letter and in spirit, which has resulted, often, not only in large savings, but in widening the Navy's avenues of manufacture. The law has yielded profits. Contrary to popular idea the Navy Department in what it manufactures does so, from a superdreadnaught to a gallon of paint or a pound of powder, cheaper than the same can be purchased. This is particularly true of the most expensive instruments of war, but is equally true of gasoline engines, electrical supplies, engines for dreadnaughts, shrapnel, clothing for marines and sailors, accouterments, and a multitude of other articles required for the fleet and shore stations.

The last Congress made an appropriation, upon the recommendation of the department, for the enlargement of the powder factory. Before the Government began to manufacture smokeless powder it paid 80 cents a pound for it. Government competition, coupled with better methods (but chiefly the fact that the Government demonstrated the exact cost of producing it), have brought down the price at which the department purchases this powder to 53 cents. The department is now manufacturing it at Indian Head at a cost of 36 cents a pound, and when the enlarged plant is completed may be able to still further reduce the cost of production. If the department had bought what it manufactured last year the powder bill would have been \$397,536.16 more than it was. In addition to effecting this saving by manufacture, the department reworked 1,013,940 pounds, at 11.9 cents per pound, and this method insures the use of much powder every year that would otherwise be useless.

Upon the recommendation of the department Congress made an appropriation for enlarging the torpedo works at Newport, R. I. In the two years that the present torpedo works have been in full operation the cost of manufacture of each torpedo has been reduced from \$4,200 to \$3,200. These torpedoes, if bought at the only private torpedo plant in the country, would cost \$5,000. The enlargement of the torpedo works will not necessarily cause the Navy Department to manufacture all its torpedoes, but ability to make a large proportion of the number needed will result in securing better prices from manufacturers. This is true of all other munitions of war. Ability to make them secures reduction in cost. This experience has justified the recommendation of the department and the act of Congress.

NO PRIVATE GAIN IN WAR PREPARATION.

It is not the policy of the department to extend manufacturing by the Navy to all that it needs, but to continue buying the bulk of its supplies from private manufacturers and business men. It should be able, however, to demand competitive bids by having potential facilities to manufacture anything needed for armament or equipment which may at any time be controlled by those who demand excessive prices. There is another reason why the Navy Department should be able to manufacture munitions of war—that policy would prevent effective agitation or organization for big preparations for war conducted by those who make profit by the manufacture of war supplies. It has been suspected in some countries that makers of armor and powder, guns and fighting craft have promoted steadily increasing equipment for giant navies and large armies for their personal enrichment, as others have practiced “philanthropy and 5 per cent.” The incentive of personal aggrandizement by prepara-

tions for war should not be permitted to exist in the United States. The effective way to prevent so baneful an influence is for Congress to give the department authority to manufacture implements of war, an authority which could be employed when necessary.

IMPROVED ACCOUNTING METHODS.

The cost of industrial work done at navy yards has received special attention during the past few months, not only for the purpose of being able to render to Congress accurate annual statements, but also to the end that true out-of-pocket Government costs may be ascertainable for comparison with offers from outside establishments, with resulting stimulation of competition and reasonable control over prices. A board of officers, selected with care from all branches of the service, went very thoroughly into this question last spring, and although the time at their disposal was quite limited they progressed far enough to submit a report and recommendation on the strength of which a departmental order was promulgated reducing by 28 per cent all overhead or indirect charges during the current fiscal year. This reduction was based on the fluctuation of total expenditures as compared with fluctuation in the volume of navy-yard work. The subject of separating and properly classifying these charges is now being exhaustively studied by a board of experts working in cooperation with the Director of Navy Yards, and it is confidently expected that their investigations will lead to results so conclusive and at the same time so practicable to adopt that the much discussed problem of cost keeping in the Navy will have been satisfactorily solved.

INDUSTRIAL MANAGERS FOR NAVY YARDS.

Every Secretary of the Navy has been confronted with the problem of securing the most efficient management of the navy yards. Inasmuch as it is both a military and industrial problem, there have been widely differing opinions as to the methods of securing the best results in the industrial department and at the same time preserving the necessary military authority. The House Committee on Naval Affairs visited most of the yards last year, and during the hearings of the Secretary of the Navy the question of economic management was fully discussed. The committee was promised recommendations on navy-yard management in the Secretary's report at the third session of Congress. As a result of long consideration, it has been decided not to formulate any hard and fast plan; but, in pursuance of the act of Congress permitting the Secretary to designate engineer and construction officers, as well as line officers, to navy yard management, a plan has been put in operation at the New York yard,

which is the largest construction as well as repair yard in the Navy, by which an admiral is to be commandant, in charge of all military matters, and an engineer officer is to be the industrial manager of the yard. At the Charleston Navy Yard an engineer officer has been named as commandant. Within a short time construction or engineer officers will be utilized at such other yards as may promise the best results. It is believed the introduction of industrial management will justify the wisdom of the experiment.

INCENTIVE TO INVENTION.

The department approves the recommendation of the Bureau of Ordnance that some plan be devised by which a cash reward may be given to any civil employee who may work out an improvement or economy in any manufacturing process or who may submit a design for some important improvement in ordnance material or plant machinery, or any improvement of naval equipment. This scheme should follow generally that authorized by act of Congress in 1912 for the Ordnance Department of the War Department. In many private manufacturing establishments some such scheme is in vogue.

ELECTRIC PROPULSION.

The navy-yard-built collier *Jupiter* is unique in being the first vessel of any size in any navy equipped with electric propulsion. Although a few small boats had heretofore been equipped with this kind of machinery, the installation in the *Jupiter* is the first one made in any naval vessel, and the first one of any considerable power in any vessel whatever.

As a test of the durability of her machinery, the department recently ordered her from San Francisco to Puget Sound, and from Puget Sound to Philadelphia through the canal. She completed the trip without incident, being the first naval vessel to make the trip from the west coast to the east coast by the canal, very forcibly indicating the value of the Panama Canal in the naval defense of the country. She completed the trip in 23 days from San Francisco to Philadelphia, whereas the *Oregon*, rushing from the west coast to the east coast via the Straits of Magellan, required 66 days from San Francisco to Jupiter Inlet. Her trip afforded a remarkable demonstration of the efficiency of the electric drive, and indicates clearly that electric propulsion must be considered hereafter in selecting the form of drive of naval vessels.

In the majority of our ships propulsion had previously been accomplished by means of reciprocating steam engines directly connected to the propeller shaft, but as the size of ships and their speed increased conditions arose which made it desirable to use turbines instead of

reciprocating engines. The turbines also were directly connected to the propeller shafts, but in some cases the conditions to be met necessitated the use of propellers that were not as efficient as could be desired, and in all cases the turbine ships were far less efficient in backing than those that had reciprocating engines. The electric drive seemed to offer advantages over either of the former systems sufficient to justify its trial on a scale large enough to demonstrate its suitability for ships of high power and great speed. The *Jupiter* installation is the result of this decision. It differs from the turbine installation in the fact that while a turbine is used to develop power it operates an electric generator instead of a screw propeller, and the electric power thus generated is transmitted to motors on the propeller shafts in much the same manner as electric power is transmitted on shore. In other words, there is a central power plant composed of boilers, turbines, and electric generators, and the power is taken from this plant to the motors on the shafts. This installation possesses an advantage over the all-turbine drive in that it is not necessary to install a backing turbine, the reversing being accomplished through the motors, and with the same ease and certainty as prevail in any other electric-motor installation, and with the further advantage over the all-turbine installation that full power can be utilized in backing.

The success that has thus attended the introduction of this new type of machinery is such that it was considered advisable to extend its use, and I have accordingly authorized its installation in the battleship *California*, which is to be built at the New York Navy Yard.

The test of the mechanical reduction gear which is being installed in the collier *Neptune* is expected to furnish valuable data for comparison with the electrical equipment of the *Jupiter*. The vessels are practically identical in construction except for the propelling machinery, and upon completion of the tests which the department has in contemplation it will be possible to determine the relative merits of the two systems.

THE PASSING OF COAL AND THE ADVENT OF OIL.

Each year marks more distinctly the passing of coal, with its attendant discomfort and engineering and military inferiority as fuel for ships of war. Henceforth, all the fighting ships which are added to the fleet will use oil, and the transition from coal to oil will mark an era in our naval development almost comparable with the change from black powder to smokeless powder for our guns. The ease with which oil can be handled, its superior steam-producing properties, the reduced number of men required for handling it, and the decreased exertion required from the firemen, to say nothing

of the ease with which the cleanliness of the ship can be maintained, all combine to make oil the ideal fuel for naval use. The operation of "coaling ship" has always been a dirty one, not only for the officers and men, but for the ship as well. No officer is so high in rank, and no nook so sacred, as to be immune from the discomforts that accompany coaling. The time consumed in cleaning ship afterwards is practically so much time lost from important military duties and is attended with no little personal discomfort; but with the new order of things a transformation will take place. "Oiling ship" will be an operation that will cause no more personal or material inconvenience than the bringing of an oil-laden lighter alongside, and the "field day" which always followed coaling, when every man became a scrubber, and every deck was seething with soap and water, will become a matter of history. The ship's routine will be carried out while oiling, and the only people who will know that fuel is being taken on board will be the few who are directly concerned in seeing that it is properly stowed.

SUPPLY OF FUEL OIL.

In my annual report of last year I recommended the passage of legislation that will enable the Navy Department to produce and refine its own oil drawn from its own oil lands in order to relieve itself of the necessity of purchasing what seems fair to become the principal fuel of the Navy in the future at exorbitant prices from private companies that may completely control the supply. During the year, in compliance with a Senate resolution, representatives of the Navy Department and the Interior Department, aided by the counsel of the Bureau of Mines, have been investigating the feasibility, desirability, and expense of the Government constructing an oil pipe line from the midcontinent field of Oklahoma to some point on the Gulf and acquiring oil lands and producing, transporting, and refining oil for the purpose of providing at all times an adequate, dependable, and economical supply of fuel for the Navy. This work will be made the subject of a report to the Senate.

The Navy Department has been unable to take any steps looking to the development of the naval petroleum reserve in California, due to the lack of funds, absence of specific authorization by Congress, and the unsettled question as to the validity of the withdrawal orders of 1909 and of the titles of operators on lands within the confines of these reserves. In order to clear up the conflicting claims to petroleum lands included in orders of withdrawal the following bills were introduced in the Senate and House of Representatives: S. 5434, S. 5673, S. 4898, H. R. 15661, H. R. 15469, and H. R. 16136.

None of these bills as originally introduced properly recognized the Navy's rights to lands within the naval petroleum reserves or provided means by which the Navy might secure oil from these reserves or be reimbursed for the oil drawn from lands specifically set aside for the "exclusive use and benefit of the Navy" by the President in compliance with an act of Congress. At first I was opposed to the passage of any of these measures because the Navy desires a proven oil-bearing area that may be set aside and reserved with the oil remaining underground in natural reservoirs, protected from loss by fire and evaporation, and stored without cost until the reduced production and increasing price of oil rendered it advisable to produce oil for the Navy from this area. After consideration of all the interests concerned the Public Lands Committee of the House of Representatives thought operators on unpatented land were entitled to relief, and H. R. 15469 (S. 5673), which carried this relief, as enacted into law contained the following amendment: "*Provided further*, That any money which may accrue to the United States under the provisions of this act from lands within the naval petroleum reserves shall be set aside for the needs of the Navy and deposited in the Treasury to the credit of a fund to be known as the Navy petroleum fund, which fund shall be applied to the needs of the Navy as Congress may from time to time direct by appropriation or otherwise." The general leasing bill (H. R. 16136), as passed by the House of Representatives, carried the following provision: "*Provided*, That any moneys which may accrue to the United States under the provisions of this act from lands within the naval petroleum reserve shall be deposited in the Treasury as miscellaneous receipts." This bill did not pass the Senate, but if it were enacted in its present form it would take from the Navy any rights it has in the Navy petroleum reserves, and I feel that I would fail to do my whole duty if I did not urge the necessity of retaining the naval petroleum reserves as such and augmenting them by other areas in other fields in order to obviate the necessity of increased appropriations in the future to purchase what now belongs to the Government.

I am still of the opinion that the Navy should own its oil lands and ultimately produce, transport, refine, and store its own oil in order that the department may at all times be assured of an adequate and dependable supply of fuel oil at reasonable cost, so that in the design of ships full advantage may be taken of the great superiority of oil as a fuel without fear of the privately controlled price and supply of oil forcing the Government to enormous increase in cost of operation of the fleet or reduced activity of the fleet in time of greatest need to the Nation.

PEARL HARBOR NAVAL STATION AND DRY DOCK.

Years ago, perceiving the military value of a naval station at Hawaii, Congress made liberal appropriations for a large naval station at Pearl Harbor and the construction of a modern dry dock to take the large warships, and large commercial vessels as well. The buildings upon comprehensive plans, with workshops, hospitals, marine barracks, and all the accessories for a well-equipped naval station at that strategic point are nearing completion, but a series of misfortunes, necessitating changes and adjustments, has prevented the construction of the dry dock which was authorized on May 13, 1908. That act authorized the construction of "one graving dry dock capable of receiving the largest war vessels of the Navy, at a cost of not exceeding two million dollars." A contract was awarded to the San Francisco Bridge Co. to construct a dry dock 589 feet long. A change to 800 feet, the limit of cost being increased to \$2,700,000, and a subsequent change to 1,008 feet, with a limit of cost still further increased to \$3,486,500, were made and the work continued until February, 1913, when a serious accident completely destroyed most of the work that had been done. In the 1913 report the following statement was made of the "naval tragedy of the year": "This disaster swept away a naval project and introduced a problem of immeasurable difficulty." At that time the enormity even of this "immeasurable difficulty" was not fully realized. It has been the overshadowing and brain-racking problem of the year, absorbing more time in its imperative investigations and considerations than any other matter to be settled by the department. A civil engineer of international reputation was engaged to visit Pearl Harbor and make report; the Chief of the Bureau of Yards and Docks and the civil engineer in charge of the work at the time of the disaster, together with half a dozen of the expert engineers in the service, have devoted a major portion of the year to the effort to devise a plan and secure an agreement with the contractors by which the dry dock would be safely completed. Recognizing the universally admitted importance of the gigantic project, and the difficulty of the construction, or reconstruction, with its call for engineering genius of the highest order, Congress granted an authorization of an additional million and a half dollars for its completion; and yet the differences between the department and the contractor seemed so apparently irreconcilable that at times resumption of work upon plans and terms that were wise and satisfactory was almost despaired of. It is gratifying, therefore, to report that an agreement has been reached with the contractors by which it is expected the work of construction will be carried to completion upon a plan approved by the ablest engineers. It is earnestly hoped that

the end has come of the series of troubles and disasters which have too long delayed this great enterprise, and that within a reasonable time it will be completed.

ARMOR-PLATE PLANT NEEDED.

The annual report for 1913 contained an earnest recommendation for the erection of an armor-plate factory. Twice the Government has authorized the construction of a factory, but twice were the armor-plate factories saved a monopoly of this business through "a mysterious Providence." There are only three concerns in the country which make armor plate, and last year, when bids were invited, all three made identically the same bids, to a cent. They justified this sham of bidding by saying that the department had fixed the price and divided the business between the three concerns regardless of the bidding, making the award of one-third of the quantity desired to each firm at the lowest figures quoted, which was always, as may be supposed, a figure which gave inordinate profits. In 1913, when the first bids had all been rejected and the manufacturers had learned that the department would not pay the price demanded, a bid was made and accepted by which a saving of \$111,875 was made for the *Arizona's* armor over the price charged for that of the *Pennsylvania*, bought in 1912. This saving, effected only after strenuous efforts to secure real competition, was very small in comparison with the saving effected in other big contracts where the three big steel concerns had real competition. Last year, on the same ship on which the department secured a reduction of only \$120,746 on armor-plate contracts of \$3,490,088, it saved \$378,261 on a contract for \$730,456 worth of special treatment steel protective deck plating. Why? Because there was competition for this special treatment steel, and the award was made to a company other than either of the three which have a monopoly of making armor plate. When the second session of the Sixty-third Congress authorized the construction of three dreadnaughts, calling for 24,384 tons of armor plate, the department confidently expected to secure bids at least based on a wholesale purchase. But, when the bids were opened, "what a dainty dish" was served up in place of competitive bidding! The three companies, instead of giving a lower price when there was offered a contract for the armor plate for three ships instead of only one, submitted bids only a trifle less than the price they had received for the armor for the *Arizona* last year. These bids were promptly rejected. Finally, upon a second opening of bids, the department accepted bids which effected a saving of \$738,648.

But, though this saving had been effected, it became even plainer than last year that the Government is at the mercy of the three

manufacturers of armor plate whose policy is to make the Government pay prices much beyond a fair profit. The three companies make affidavits that they are in no combination and have no agreement affecting prices, as they are required by law to do. This does not, however, prevent their availing themselves of a mental telepathy which works against the Government and denies real competition in the bidding.

Congress at its second session did not act upon the recommendation to authorize the erection of an armor-plate factory. Some Members did not see their way clear to vote the large sum necessary for the erection of a plant. Others did not desire to make the departure without the fullest investigation and inquiry. But Congress did in the naval bill provide for securing information. It authorized the appointment of a committee to consist of the chairman of the Committee on Naval Affairs of the Senate and the chairman of the Committee on Naval Affairs of the House of Representatives and one naval officer to be selected by the Secretary of the Navy to investigate and report at the next regular session of Congress upon the cost of erection of an armor plant to enable the United States to manufacture its own armor plate and special-treatment steel, capable of standing all ballistic and other necessary tests required for use in vessels of the Navy, at the lowest possible cost to the Government, taking into consideration all the elements necessary for the economical and successful operation of such a plant. It provided that the report should contain the estimated cost of a plant and site sufficient to accommodate a plant having an annual output capacity of 20,000 tons, and also a plant having an output of 10,000 tons, and also an itemized statement of the estimated cost of the necessary buildings, machinery, and accessories for each, and the estimated annual cost and maintenance of each, and the estimated cost of the finished product. The committee was authorized to sit during the recess of Congress, to send for persons and papers, and to administer oaths.

In pursuance of that provision the commission of inquiry, composed of Senator B. R. Tillman, chairman of the Senate Naval Affairs Committee, Representative L. P. Padgett, chairman of the House Naval Affairs Committee, and Rear Admiral Joseph Strauss, United States Navy, Chief of the Bureau of Ordnance, are at work to obtain the information called for in the naval bill, but as Congress did not adjourn until late in October the committee has not had time for full investigation and for hearings. It is to be regretted that this committee can not now, because of the war in Europe, make an examination into the production of armor plate abroad. That information would be of the highest importance, giving all the facts so

comparison could be made between what armor plate should cost and the investment in plants in other countries as well as our own.

NAVAL RADIO.

The President recently signally honored the Navy by intrusting to this department the enforcement of the Executive order of August 5, which was necessary to prevent radio stations under the jurisdiction of the United States becoming the instrument through which unneutral messages were sent to vessels at sea or to other radio stations. At the outbreak of the European war it developed that no precedent existed which related to the use of radio stations by persons within the limits of neutral countries during continuance of hostilities. The President, in pursuance of his neutrality proclamations, intrusted to the Navy Department the duty of acting as censor of radio communications. This work has been done without friction or injury to commercial business. It became necessary for the Government to take over the radio station at Tuckerton, N. J. Its ownership was in dispute, it had no license to operate under the radio act, and its control by the Government was required to meet a real demand for its use for neutral messages.

The primary purpose of the naval radio establishment is a purely military one, and this has been emphasized by events in connection with our occupation of Vera Cruz and still more forcibly during the progress of the war in Europe; and while this feature of our equipment is one in which the naval service alone is directly interested, it is a matter of scant knowledge how great a part the naval radio establishment plays in everyday commercial life. An idea of this may be had from the statement that we have opened 25 stations to commercial business, and that every ship of the Navy is herself a commercial station, as all private messages handled are paid for by the senders. During the war in Mexico, when all land wire and cable communication between the United States and the southern part of Mexico was interrupted, the naval vessels on the west coast afforded the only means of quick commercial communication and soon began to handle a large business.

In addition to the paid commercial business carried on by the naval radio stations the system renders a free service of inestimable value in the daily transmission from Arlington and other stations of the time signals from the Naval Observatory, thus enabling ships at sea, even though far beyond the range of transmission of their own equipment, to determine their exact chronometer correction. Even sailing vessels which habitually make long voyages and which have no power with which to operate a radio station of their own

may, at trifling expense, be equipped to catch this signal. Our own naval ships have carried it far into the Mediterranean.

But it is not the seafaring people alone who make use of this time signal. It is attracting great and growing attention throughout the country. Jewelers have installed receiving apparatus for the purpose of getting it, and many amateur receiving stations have been established for the receipt of the time and weather reports. A leading jewelers' trade magazine has informed the department that there are not less than 300 jewelers throughout the country who now receive the time signal by radio, and that the number may be expected to grow to about 3,000. The same journal says that although maritime interests may have been the primary reason for the erection of the Arlington station, it will benefit more people on land than at sea. It is a pleasure to record this evidence of the value of this service, as it is also a matter of pride that the first radio time signals ever sent out were from our own naval stations.

Another interesting feature of this free radio service which should be of incalculable benefit to shipping is found in the radio compass now under construction at the Fire Island station, near the entrance to New York Harbor. This device is intended to send out radio signals of such a character that a vessel in a fog may get a close approximation of her "bearing," or compass direction, from the station. By means of observations taken 5 or 10 miles apart it should be possible for the vessel to determine her actual position with fair accuracy. This is the first installation of this type to be made in this country; but a second installation of different type, though answering the same purpose, is projected for the station at Cape Cod. The signals sent out by the radio compass at Fire Island will necessarily be limited as to range, but the Cape Cod installation will allow of a ship calling the station in the usual manner from any distance within the ship's ordinary range and receiving a definite reply as to her bearing from the station. In the case of Fire Island the ship will determine her bearing from the character of the signals continuously emitted; for Cape Cod the station determines the bearing of the ship from her calling signal and sends the information back. If these installations prove as successful as anticipated, the radio operators of ships will become an important part of the navigating force.

One of the most important parts of the naval system, from a public-service point of view, is the Alaskan branch. On account of their isolation the stations in this division are also the most difficult, though not the most expensive, to maintain. Regarded merely as an aid to the important shipping in these waters, their value is very great. In addition they play an important part in the rapidly growing commercial business of inland Alaska. The Army cable

is the only wire connection between western Alaska and the United States, except the very roundabout route through the Canadian northwest. This cable is laid in difficult bottom and is expensive to maintain. Its operation is frequently interrupted, and at such times the radio stations must be depended upon to handle the traffic. The performance of the radio stations has been very creditable in this work, but it is, of course, out of the question for the present few and rather low-powered stations to handle the entire traffic carried by the cable in the busy season. A medium high-powered station to replace the small station at the Puget Sound Navy Yard and an additional station of the same type in Alaska are needed additions to the present military system, and such stations would practically solve the question of uninterrupted commercial communication with Alaska, allowing the abandonment of the cable with a great saving to the Government and a much cheaper service to the public. With the building of the Alaskan railway the need for additional stations will become more urgent.

These are features of our radio installation of more or less general interest, but the military feature is the one with which the department is more intimately concerned. In this field there has been an enormous advance during the past year, and much of this progress, perhaps the greater part, is due to the original work of the department. Commercial progress in the art has been notable, but it must be remembered that the naval problems in radio work have no parallel in commercial work; that foreign Governments guard carefully their own discoveries and developments; and that therefore the Navy Department is dependent upon its own expert talent for military progress. For this reason it is very gratifying to be able to state that we have kept abreast of the times and have made material progress, and that our equipment is such as will place us in a position at least not inferior to the corresponding service of any foreign Government, if we do not, in fact, surpass it.

The erection of the high-powered stations authorized for San Diego, Honolulu, Guam, Manila, and Tutuila has been delayed through inability to acquire title to the private property selected as a site at San Diego. With the present statutory limit as to cost it is impossible to build fully adequate stations unless the cheapest construction is resorted to. An absolutely necessary saving under the circumstances was effected by letting a single contract for the steel towers at San Diego, Honolulu, and Manila, but the delay in connection with the transfer of title at San Diego has delayed the whole chain. The title question has, however, just recently been favorably settled, and proposals for the towers, the largest single item of cost of each station, will be advertised this month. The rapid completion of the Panama Canal made it necessary to proceed with the

canal station independently. Delay has been encountered there also, owing to delinquency of contractors, but the station is now rapidly approaching completion, and it is expected that the first tests of the installation will be held about March 1. It is interesting to note that at the time the Panama Canal station, officially known as the Darien station, was contracted for, the type of equipment selected by the department was practically discredited by a majority of the most eminent technical authorities throughout the world. The Navy Department, however, through its own investigations and with the cooperation of the progressive American manufacturers of the apparatus, had come into possession of certain data that left no doubt as to the choice to be made. The notable scientific development that has taken place during the last year has confirmed the department's action beyond peradventure. In this one contract the direct saving to the Government, due to information resulting from experimental work, was sufficient to cover the total ordinary expenses for experimental work during a period of five years.

DETERMINATION OF LONGITUDE BY RADIO.

The Naval Observatory has added to its record of achievement this year by determining directly the difference of longitude between Washington and Paris, and finds this difference of longitude between the official meridians of these capitals to be

$$5^h 17^m 36^s.658.$$

The velocity of transmission of radio signals given by these observations is

$$175,000 \text{ miles per second,}$$

which is probably the best value yet obtained, though owing to the distance (3,831 miles on a great circle) between the stations, which, compared with this velocity, is small, it is subject to a probable error of $\pm 16,000$ miles per second.

These observations constitute the first direct determination of the difference of longitude between Washington and Europe, and it is the first time that radio has been used for trans-Atlantic longitude determinations. Independent observations were made by the United States and French Governments, each having two parties (which interchanged stations at the middle of the observations), one at the United States Naval Observatory and the other at the Observatoire de Paris, using the Navy radio station at Arlington (Radio, Va.) and the Eiffel Tower, respectively, for radio transmission.

SHIPBUILDING WORK AT NAVY YARDS.

Construction of ships in navy yards justifies an enlargement of that policy. It was discouraged formerly because, by an unwise system of accounting, overhead charges, in nowise properly chargeable

against new construction, were added to the actual cost of construction. This made it appear that ships built in navy yards cost much more than in private yards, and the facts were not always in accord with that appearance. In fact, taken as a whole, the contrary is true if no items are charged up to new construction except such as are increased in a navy yard by reason of such construction. It is necessary, also, in order to keep down the prices charged by private contractors, for the Government to be able to build its own ships. It then knows the cost and can do all its shipbuilding unless private yards make reasonable prices. During the past year the department authorized new construction work at navy yards which hitherto have not been so engaged. There is therefore at the present time a greater volume of new shipbuilding work in progress and authorized at navy yards, also a greater number of navy yards so employed in new construction, than ever before in the history of the new Navy. It includes the battleships *Arizona* and *California* at the New York Navy Yard, the fuel ships *Kanawha* and *Maumee* at the Mare Island Navy Yard, submarine *L-8* at the Portsmouth (N. H.) Navy Yard, transport *No. 1* at the Philadelphia Navy Yard, and supply ship *No. 1* at the Boston Navy Yard. There have also been constructed at navy yards during the past year numerous coal barges and several self-propelled oil barges.

Because of the many advantages, it is the policy of the department to develop shipbuilding at navy yards. Amongst said advantages are—

- (1) A check upon the cost of private shipbuilding.
- (2) Increased efficiency and preparedness of the yard working forces due to a more uniform and steady employment of workmen.
- (3) An improved morale of yard service, from master workmen to the unskilled laborer.
- (4) Elimination of the expenses of inspections and trial trips.

Battleship "New York."—The battleship *New York* was fully completed and left the New York Navy Yard on April 26, 1914, ready for service, within the 36 months' constructional period set by the department. Although the keel of the *New York* was laid 4½ months after the keel of a sister vessel building by contract, she left the navy yard ready for active service, several weeks earlier than the contract-built vessel. Further, the actual cost of construction was \$650,000 less than the estimated cost. The department has commended the commandant, construction officer, and engineer officer of the New York yard, for the excellent work performed by them and the divisions under their control in connection with this work.

Submarine "L-8."—As there is only limited competition in the construction of submarines—but two companies in this country being

engaged therein at this time—I entered into a contract June 29, 1914, with the Lake Torpedo Boat Co. for the necessary working plans and license for the Navy Department to build one submarine boat. I assigned the construction of this boat—submarine *L-8*—to the navy yard, Portsmouth, N. H. By reason of the construction of this vessel it is hoped to arrive at a definite knowledge of the actual construction costs of vessels of this character, and thus put the department in a position to build its own submarine vessels in the future should there be any evidence of the absence of competition for submarine contracts. During the coming year it is very likely that it will be necessary to further increase the construction of submarines in navy yards.

PERSONNEL AND ITS WISE EMPLOYMENT.

Officers.—Attention is invited to the report of the Chief of Bureau of Navigation on the subject of personnel. This subject requires the serious and thoughtful consideration of Congress, as well from a point of view of efficiency as of economy. First attention should always be given to the personnel, for the man is greater than the machine. Under existing law officers enter the grade of rear admiral at an age when they have but little time to serve before retirement. In consequence, the Government loses the value of experience gained by officers in command of fleets and squadrons, besides being burdened by a greater cost of the retired list, due to the retirement of a greater number of officers as rear admiral than would be the case if officers entered that grade at an earlier age and had a longer time to serve in it. The number of junior officers is increasing from year to year by the output from the Naval Academy, and has already reached large proportions compared with the numbers in the senior grades. If this condition should continue there would come a time when the real working force of the line of the Navy would be composed of junior lieutenants and ensigns, some of whom will be at the present age and length of service of the captains and commanders. At the same time the length of service in the senior grades would become so short that they would be but stepping-stones to retirement as rear admiral without adequate service having been rendered in them by the officer concerned. The sooner this condition is remedied the more economical will be the cost, the greater will be the efficiency, and the less drastic will be the action required. The department has appointed a board, composed of the Assistant Secretary of the Navy, the Chief of the Bureau of Navigation, and Naval Constructor Taylor, to study this whole question and recommend legislation which will remedy the conditions, having in view efficiency as well as economy.

Enlisted men.—It has been the policy of the department to raise the standard of the enlisted personnel by opening the door of opportunity to the worthy and by weeding out the unworthy, who bring discredit upon the uniform of our sailors. In consequence of this policy, the recruiting officers are enabled to pick and choose among the applicants for enlistment, and a greater percentage of men are reenlisting. When the information is disseminated throughout the country that the position of an enlisted man in the Navy is an honorable one; that none but those of good character are taken; that every man who enlists has the opportunity of getting an education, without expense to himself or his family; that he has the opportunity of learning a useful trade; and that if he wishes to make the Navy his life work he has the opportunity for advancement through the various grades of petty officer, warrant officer, and commissioned officer to the highest rank in the Navy, it is but natural that young men of the highest type of American manhood will be more and more attracted to the Navy, and that their parents will not only encourage, but urge them to enlist. It is not surprising, therefore, that the Navy's authorized complement, which was short for several years, was completely filled in May, 1914, that recruiting had to be suspended in order not to exceed the limit authorized by law, and that a waiting list of applicants for enlistment had to be established. During the fiscal year ended June 30, 1913, the enlisted strength of the Navy reached a total of 48,068, and in the fiscal year ended June 30, 1914, a total of 52,667, showing a net gain of 4,612 men during the year, the number required to man five dreadnaughts and seven destroyers. The percentage of men who, by the character of their discharge, were entitled to reenlist, and who reenlisted during the fiscal year of 1913 was 57 per cent. The same for the fiscal year of 1914 was 65 per cent, or a net gain of 8 per cent. The total number of men serving under reenlistment in 1913 was 16,983. The same for 1914 was 18,640, or a net gain to the Navy of 1,657 experienced men—enough to fully man two of the latest dreadnaughts. During the fiscal year ended June 30, 1914, there were 88,943 applicants for enlistment. Of these, only 18,948 were accepted, or about 1 in 5. Of this number 5,168 had already served one or more enlistments. These figures indicate the high standard required of recruits, and show that there is no lack of fit men who desire to enlist in the Navy.

In view of this gratifying condition, the department has not found it necessary to retain in the Navy men who are undesirable from any point of view, or men who for various personal reasons desire to sever their connection with it in an honorable status. Commanding officers are, therefore, given greater latitude in maintaining

a high efficiency of their commands by ridding the service of undesirable characters, and at the same time the purchase of a discharge is made easy for good men who, for personal or other reasons, desire to return to civil life. The purchase of discharge means only reimbursing the Government for the amount actually expended upon the man before he has given adequate service in return. The man who now enters the service does not feel that he is necessarily bound for four years, whether he likes it or not, or whether unforeseen conditions in his family affairs require his presence at home, but is assured of an honorable means of severing his contract with the Government.

Distribution of personnel.—The proper distribution of the personnel is a question which involves economical problems no less important than are the proper expenditures for material requirements. The main object in all considerations is to attain the highest efficiency in the fighting fleet. Since the upbuilding of the modern Navy began many vessels have been added to the Navy List from time to time, which, although serviceable for war purposes in their day, are now obsolete for modern warfare. Many of these vessels are now in service for patrol duty in southern waters and elsewhere. In case of war many of them would be brought home and turned over to the Naval Militia or other reserve force and utilized in the naval-defense districts on the inner line of patrol. Their personnel would be transferred to ships of fighting value. In time of peace it is desirable to utilize a number of such vessels for patrol and cruising duty, as they are less expensive to maintain than are the vessels designed for modern warfare. As these vessels advance in age, however, their repair bills become greater, and it would be real economy both in personnel and in maintenance to strike them from the Navy List when their crews are needed to man the latest types of vessels designed for the fighting line. Naturally, if all vessels of the Navy, including those referred to, are to be kept in full commission in readiness for immediate war with a first-class naval power, many more officers and men would be required than are at present authorized; and there would be an increasing demand from year to year for more men to man the vessels newly constructed. Happily, however, the necessity for such a condition is not apparent, and the finances of the country should not be overburdened to provide for such contingency.

The General Board in its report (printed as an appendix) recommends in section 43, paragraph (a), that personnel be provided for certain classes of ships named in the report. By wisely utilizing the present enlisted personnel all ships of the classes named can be maintained in full commission without addition to the present enlistment and therefore no legislation is needed to carry out their recom-

mendation. This is clearly shown in a report by the Chief of the Bureau of Navigation, which is printed in the appendix on page 64.

It is estimated that more than 90 per cent of the effective fighting power of the Navy is now fully manned. And this percentage will be increased proportionately as new ships are placed in active service by taking the crews from the older ones of little or no fighting value. It is conservative to say that the dreadnaught *Pennsylvania* in fighting value is worth four or five old battleships and an indefinite number of old cruisers, yet she requires no more men than an old battleship, or two or three of the old cruisers. In other words, 800 men on the *Pennsylvania* are as effective as 4,000 men on old battleships or as many thousands on old cruisers. This comparison should be borne in mind if the question arises whether the personnel should be increased at the expense of new construction. Owing to the financial condition of the Treasury, due to war conditions abroad, the department does not ask for more men this year, but intends, by the distribution of the personnel to the best advantage, not only to maintain the effective fighting strength of the Navy, but to increase it proportionately as ships now under construction are completed and added to the Navy list during the next year. Since March, 1914, the department has placed in full commission 12 more vessels of the older type than were deemed necessary a year ago. These were in addition to the vessels newly built, and were demanded by the situation in Mexico. The department was enabled to meet this increased demand on the personnel by recruiting to the authorized strength during the year and thus gaining 4,600 more men than were in the service last year.

It is for the Congress to establish the effective strength at which the Navy shall be maintained, both in personnel and in material, and for the department to advise as to the proper balancing of the two. For the reasons given above the department is strongly of the opinion that any retrenchment that may be deemed advisable on account of the financial condition of the Treasury should not be in new construction, as it has pointed out that, if deemed necessary, the present authorized personnel can take care of the new ships that will be added to the Navy in the next two years by withdrawing from service old vessels of little or doubtful military value. Later on, however, increase in personnel should keep pace with new construction. In the meantime there will necessarily have to be placed in reserve from time to time vessels which, although not sufficiently up to date for the fighting line, can render good service in coast defense. For the manning of such vessels and of the auxiliaries which would be required with the fleet in time of war, a naval reserve is necessary, and should be organized and trained at the earliest practicable date.

The department will forward for consideration of the Congress at its next session a plan for the organization of such a reserve force from the honorably discharged men of the service. There should be available a trained and organized force ready at the outbreak of war to man all vessels capable of rendering military service. This can only be accomplished by maintaining a reserve, as under our system the country does not contemplate keeping the entire Navy on a war basis in time of peace.

ADMIRAL AND VICE ADMIRALS.

Last January the department recommended that the rank of admiral and of vice admiral be restored. No year goes by in which the Navy is not employed in foreign waters, and it has unfortunately become quite the usual thing for our commanding officer to find himself subordinate to officers of other navies regardless of the relative strength of the force under his command. At no time in our history was this condition more strikingly illustrated than at Vera Cruz. The commander in chief of our Atlantic Fleet found himself subordinate in rank to the representative of another nation, with a much smaller command, when it was of paramount importance that any action should be under our direction. A careful consideration of the matter and its further effect on the improved organization of the fleet again prompts me to suggest that there be authorized one admiral and at least two vice admirals. There is, however, no necessity for an increase in the number of flag officers. The number of rear admirals could, without detriment to the service, be reduced by the number of appointments to the higher grades.

NAVAL MILITIA.

One of the vital necessities of the Nation, in the opinion of Jefferson, was a properly classified and well-led militia, composed in the main of young men. In his First Inaugural he said: "The maintenance of a well-disciplined militia, our best reliance in peace and for the first moments of war, till regulars may relieve them, I deem one of the essential principles of our Government and, consequently, one which ought to shape its administration." Later on we hear him thus advising his brilliant young understudy in statesmanship, James Madison: "It (a militia of this type) is the real secret of Bonaparte's success." Jefferson's far-seeing wisdom on this subject considered our immense extent of coast line, and he said in 1807: "I think it will be necessary to erect our seafaring men into a naval militia and subject them to tours of duty in whatever port they may be." The following year his ideas had crystallized into what he enthusiastically called "our naval-militia plan."

Although the need for such an organization has always been apparent, the Naval Militia of the present had its beginnings so late as the year 1890. On the recommendation of the department the Naval Militia bill, which had endured rough sailing for a number of years past, was enacted into law last February, and the Division of Naval Militia Affairs was organized under the Bureau of Navigation. The nucleus of the division was found in the State organizations where the patriotism of hundreds of young men reared by the seaside had induced them to devote their knowledge of the sea and their energies to this line of service. The new law coordinates these heretofore distinctly State organizations into a Federal arm and, in time of war, places them at the call of the President as commander in chief of the Navy.

Under the law a Naval Militia General Board has been appointed by the Secretary of the Navy to formulate standard professional examinations for officers and enlisted men and to devise plans for carrying out the provisions of the Naval Militia act. The board is composed of the following members, who had demonstrated their interest and ability and enthusiasm: Commodore R. P. Forshew, Naval Militia of New York, of New York City; Capt. C. D. Bradham, Naval Militia of North Carolina, of Newbern, N. C.; Capt. E. A. Evers, Naval Militia of Illinois, of Chicago, Ill.; Commander J. M. Mitcheson, retired, Naval Militia of Pennsylvania, Philadelphia, Pa.; Lieut. J. T. McMillan, Naval Militia of California, of San Francisco, Cal.

Some increase in the appropriation will be needed to effectively carry out the provisions of the act, chiefly to maintain the annual cruises, in which the personnel receives its actual sea training. A Naval Militia, adequate in personnel and equipment, goes a long way toward avoiding the financial burdens of un-American militarism and yet of proving ready for national defense in case of war. It is surprising how economically such an arm of the service may be maintained. There were in the Naval Militia on July 1, 1914, 596 officers and 7,132 men, of varying efficiency. Not counting the officers, in order to institute a comparison of enlisted men, the cost per man of the Naval Militia, estimated for 1916, is \$54 per man per year. This includes the purchase of arms, uniforms, equipments, etc., for the year, and the pay, transportation, and subsistence of the men for a 15-day cruise. The average cost of one enlisted man in the Regular Navy per year is \$636.97. In other words, the Navy Department can maintain 7,132 of the Naval Militia for approximately \$385,000, against \$4,542,870 to maintain 7,132 enlisted men of the Regular Navy for the same time.

Officers and men of the Naval Militia have cruised on vessels loaned to the States, and also on vessels of the regular Navy, and several officers of the Naval Militia participated in the cruise to Europe of the battleships in December, 1913, and the experience gained has been of great benefit. It is planned to afford all possible opportunity to the members of the Naval Militia for such training as will equip them for efficient service if needed.

A STRONG NAVAL RESERVE.

The country possesses potentially a well-trained and capable naval reserve, though as yet unorganized, that would be immediately available in case of war. Every year a large number of the enlisted men, having served the four-year term for which they contracted, return to civil life. In the past 10 years more than 38,000 of them, after serving at least one four-year enlistment, retired and entered upon various industrial pursuits, and it is certain that at least 25,000 of these would respond to the first call to the colors, the majority of them giving up lucrative positions in order to do so. In every community can be found these well-trained, efficient, intelligent men, who have made good homes for themselves and their families. They never lose their love for the Navy or forget its training or lose the value of its discipline. Experience in the War with Spain in 1898 showed that, while preferring civil life in times of peace, they hold themselves ready to return to the Navy the moment their country should be engaged in war. There are thousands of these former sailors, men fit by physical strength and experience both to officer and man naval auxiliaries, as well as to return to their places as gunners, gun pointers, and other positions on dreadnaughts, destroyers, and submarines. Plans are making to so organize this body of reserves that they will constitute an immediate effective reserve for time of war.

CHANGE IN LAW FOR RETIREMENT PAY.

The Government is generous in the retired pay of officers of the Navy. This generosity in the way of retired pay amounted last year to \$3,152,512.95. So much of that amount as goes to those who have rendered long service or are rendered unable to continue in active service by means of disabilities or illness due to duty afloat is gladly paid by the taxpayers. But this generosity is abused when, as is required under the law, a young officer is retired on three-fourths pay for life when he is well qualified for duties in civil life. Often the law compels retirement because of color blindness, lack of perfect vision, or some other impediment that unfits one for service as a naval officer, but does not greatly, if at all, impair usefulness in other vocations. It is earnestly recommended that Congress pass a graded

retirement law based upon the length of service and which will also differentiate between total and partial disability. In the case of partial disability there should be graded pay based upon the number of years in the service of the United States.

THE EDUCATIONAL SYSTEM AND ITS VALUE IN PROMOTING EFFICIENCY.

The Navy is coming to be "the biggest university in America," as it has been termed since the broadening and deepening of its educational system. "Every ship a school" is now literally true. From the class in the "three R's" of the youngest enlisted men, to instruction at the Naval War College, attended by officers of the highest rank, with real university extension, the Navy is an educational institution, embracing instruction in every line, technical, professional, academic, and practical. In our day the best efficiency is obtained only by the best training, and this applies to the man behind the gun as well as to the officer who is master of tactics. The fine showing made by our men during the cruise of the fleet last winter in the Mediterranean was due, primarily, to the overhauling given to the recruits at the several training stations, where they are taught obedience, promptness, respect for constituted authority, and other qualities that make for self-respect and fit them for their work.

The school for academic, vocational, and technical instruction, referred to in the last annual report, was put into effect January 1, 1914, with a view to supplying the need for academic education and also to provide systematic means by which all enlisted men and warrant officers may receive the assistance and encouragement in technical branches which may be necessary to fit them for promotion in the Navy or which will better prepare them for civil trades at the end of their period of service afloat. Under this plan the ship's routine includes a period each day set aside for instruction, during which no work is required except in cases of emergency or necessity, the period being devoted to the self-improvement of every man in the ship and to the instruction of those who are ambitious for immediate or ultimate promotion. The instruction is under two heads—academic and technical or professional. In the former it is compulsory for all enlisted men not well grounded in the common-school branches who have not completed two years' service in the Navy. The subjects embraced in this department are reading, writing, spelling, arithmetic, geography, and history, and the course is continued for each man until he reaches a satisfactory standard.

In order to make the naval or professional instruction (which is compulsory for all) systematic and general throughout the service, a plan has been prepared prescribing the subjects which every man, irrespective of his rating, should know, and also the subjects which

his special rate requires him to be familiar with. In furtherance of this plan and to perfect the training of the men, the Bluejackets' Manual has been revised and the different chapters rearranged, in order to treat of the several rates of the Navy, every man being required to qualify himself thoroughly on all subjects contained in the chapters devoted to his particular rate. In this manner habits of study and application are bred in our men, which make them more efficient, more ambitious, and conduce to a general uplifting reflected in better discipline and an improved morale. In addition to the Bluejackets' Manual, above referred to, manuals have been prepared by the Pay, Medical and Engineer Departments that are of great assistance in the school work.

Largely as a result of the educational facilities given to the personnel of the Navy, 5 enlisted men have, within the past year, passed the examination for entrance to the Naval Academy; 12 were made pay officers (1913 and 1914); and 9 warrant officers, in the same time, were promoted to ensign.

In line with the general educational scheme afloat, academic studies now form an important part of the instruction at the several training stations, where the facilities for this class of work are excellent. In this connection it may be pertinent to quote from a recent report of an officer on training duty:

"In my enthusiasm for the system as practiced at this training station and the results attained, results which often came under my observation while on sea duty and which now I can fully appreciate, I wish to express regret that all officers interested in the training of men are not given an opportunity to visit this station. The mental development observed in the classroom fully compensates for the time and effort involved, and a double benefit is derived in the recruits' possibilities for future usefulness and a corresponding gain to the naval service."

One year ago the course was extended from three to four months, and in a short time the course at the training stations will be extended from four to six months, so that when the recruits are transferred to the fleet the emphasis in the educational work may be laid more upon the strictly technical subjects.

The "Report of the Commission on National Aid to Vocational Education," bearing date of June 1, 1914, emphasized the importance in instruction in the fundamentals to those who are being trained for usefulness in the Navy or other callings where technical knowledge is essential.

"Vocational education will reduce to a minimum the waste of labor power, the most destructive form of extravagance of which a people can be guilty. This training, to be most effective and

thoroughgoing, should be restricted to persons over 14 years of age *who have laid the foundation of a general education in the elementary school.*" In the light of this expert testimony and experience it can be readily seen that the Navy is doing its full share toward preparing men for their duties both as members of the national defense and as useful citizens after leaving the service. The methods employed, including the educational features, are used with the supreme object of securing efficiency, which is attained only after painstaking and thorough training. It is the testimony of all who have seen the system working at its best that the all-around alertness and responsiveness of the men are promoted by the mental drill given in the schoolroom, where the effects of early neglect in many and of mere rustiness in others are, in a great measure, overcome. This will lead naturally to better and quicker results in the professional work afloat. It is the purpose of the department to make such changes, founded on the experience of one year's trial, as will greatly improve the educational policy, which, in spite of the unavoidable interruptions caused by the service of the fleet in Mexican waters, has fully demonstrated its effectiveness in raising the standard of knowledge of the enlisted personnel, and thereby improving the general efficiency of the naval service. Young officers who teach the enlisted men are greatly helped by this experience, both in the stimulus it gives to their own improvement and in the better knowledge they obtain of the youths who come under their instruction.

The technical schools maintained by the Navy at the beginning of the year, schools equal to any of their kind in the country, were:

The Torpedo and Seaman (Gunners' School at Newport, where a thorough course, theoretical and practical, is given in all that relates to the manufacture and handling of torpedoes and ordnance material.

The Machinists' School at Charleston, S. C., in which men are fitted for the duties of machinists, ashore and afloat.

The Electricians' (radio and general) Schools at New York and Mare Island. Graduates of these institutions are ready to perform the many duties that fall to the lot of those charged with the care of the dynamos and radio plants used in the service.

The Artificers' School at Norfolk gives instruction and training in carpentry, blacksmithing, painting, plumbing, and shipfitting.

The Musicians' Schools at Norfolk and San Francisco.

The School for Cooks and Bakers at Newport.

The Yeomen's Schools at Newport and San Francisco.

At these institutions instruction and training are given in trades that are useful both in the service and in civil life. This year to the above have been added two others, one at Newport for the training of the hospital corps of the Navy and the other in Washington

for newly appointed pay officers. These promise to supply a need which has been acutely felt for many years. The first named now numbers 100 pupils, who, after a course of six months in all that pertains to their profession, will be transferred to naval hospitals for duty, where they will acquire further experience in practical nursing and in operating rooms. It is confidently anticipated that this school will result in so high a state of efficiency that the system used in this institution may well serve as a model for the training of the hospital corps of any naval service. It is hoped that a similar school may ultimately be established on the west coast. The course given to the naval pay officers, which extends over a period of 38 working days, includes a complete set of practical accounts, a study of the Naval Regulations, and warnings against the mistakes often made by young and inexperienced officers. There is reason to expect that this school will result in great good to the individuals forming the class and to the Navy in general.

The Naval Academy, while continuing to place emphasis upon technical branches that fit midshipmen for the responsible duty devolving upon naval officers, has this year broadened its course in English and in literature. A liberal education in the mother tongue, in languages, drilling in debate, and practice in composition are stressed second only to subjects that relate to the military and nautical training. A high standard of morale and efficiency is required of midshipmen. No student whose life is not clean and who can not govern his appetite is permitted to remain. Hazing invites immediate expulsion. More liberty and responsibility are now given the midshipmen of the first class, inasmuch as they are now graduated as commissioned officers. With this large liberty and responsibility the midshipmen are demonstrating that the trust reposed in them aids in better discipline and scholarship.

The last naval bill permitted the Secretary of the Navy to appoint annually 15 enlisted men, who could pass the entrance examination, as midshipmen to the Naval Academy. After the passage of that act the time was so short before the examinations that only five qualified for entrance this year. The better educational facilities in the Navy will with every passing year enable ambitious and capable youths to qualify for this instruction and to prepare for commissions in the Navy. They will bring practical experience aboard ship to the academic life at the Naval Academy and will help the other midshipmen while they are in turn being helped by the influences and instruction that train American naval officers capable of the high duties required of them in the service.

An important change in policy has been inaugurated by which the Naval Academy organization is transferred to sea during the summer months. A practice squadron, consisting of three battleships,

with the superintendent in command, visited Europe during what is called vacation in most schools. They were given the opportunity of visiting the most historic and interesting places abroad. While en route to and returning from Europe they were instructed in every duty afloat, thus giving them the instruction of travel when ashore and technical instruction on the voyage. All the officers of the Naval Academy, except a sufficient number to teach and drill the new fourth class, which enters in June, continued their teaching and leadership on the cruise with the midshipmen of the other three classes. This insures a uniformity of instruction along practical lines in continuance of the theoretical and practical teaching given during the academic year.

The post-graduate course at the Naval Academy is continuing its excellent work with a class of young officers, 5 of whom are taking a course in ordnance and 20 in engineering. Other graduates are given post-graduate work in special branches in other institutions.

As pointed out in my last annual report, the apex of the Navy system of education is the War College at Newport, where about 30 officers are now receiving such instruction in the history of naval warfare and practical problems in strategy and tactics as tends to fit them for high commands, while over 400 are taking a similar course by the new correspondence methods introduced last year. It is the department's policy to have, as far as practicable, all officers pursue a course in the science of war, including strategy and tactics, at the Naval War College before they reach the rank which entitles them to high command afloat. When the fleet has its rendezvous for practice at Newport, summer classes bring the advantages of instruction within the reach of scores of other officers, who testify to the benefit derived from even a short course.

THE NAVY NO PLACE FOR THE DISSATISFIED OR THE DERELICTS.

The prison and punishment problems have received thorough investigation and consideration during the year. Formerly all deserters—young and old alike—were sent to prison. Later, disciplinary barracks, so called, which were in reality simply reform schools, were established, where youthful offenders were given instruction and an opportunity to reinstate themselves in the service by good conduct. Long confinement in times of peace for military offenses is not in keeping with the spirit of our age. Such sentences do not improve the men punished or lessen the offenses among their fellows. All sentences have been reduced for purely military offenses during the past year and no youths have been put in prison. They have been sent to the disciplinary barracks and for a shorter period than heretofore. Also a reward for good behavior has been held out both in reducing the length of the period in detention and in

the opportunity to be restored to an honorable status in the Navy. Of the 696 such young offenders now unconditionally restored to duty and restored to duty on probation at Port Royal, 609 are still serving in an honorable enlistment, 14 of whom have reenlisted. At the Puget Sound disciplinary barracks, of the 157 restored to duty 130 have been returned to the service. At Port Royal 89.6 per cent "made good" and at Puget Sound 83 per cent "made good," thus justifying the clemency and the confidence reposed in youths who had left their ships. Few of them could be classed as criminals, but prison sentences for long terms might have converted some of them into criminals.

Desertions did not decrease by reason of severe punishment of the older offenders. Harsh sentences do not decrease infractions. Desertions in time of war can not be treated too seriously. In time of peace it is the duty of the Government to find the best way to promote efficiency, and it has been shown that long sentences for desertion have failed to effect the desired remedy. For more than a year the question of finding better ways has been under consideration, and the department sought the advice of experienced naval officers, alienists, and students of prison management, with a view to abandoning the methods which all navies had deemed essential to maintaining a full enlistment and enforcing discipline. The enforced service of men who were held to their four years' enlistment, though conditions had arisen which made them desirous of leaving the service, was not based on sound principle, and is not a wise policy when the Republic is not in peril. These two questions pressed upon the responsible direction of the Navy Department: "Is such a policy necessary to obtain and retain sufficient men to man the ships? Can the best service be expected of men who are held when they desire to leave?" The more these questions were considered the stronger became the conviction that the time had arrived for a reversal of the century-old policy, and it seemed to be contrary to the spirit of this age to hold on to a traditional method of treating the enlisted personnel.

In May of the present year the enlistment of the Navy for the first time in a long time was fully up to the number permitted to be reenlisted by Congress. The net increase had been more than 4,600 in a year, and this had been easily secured under regulations calling for moral and physical qualities which resulted in a denial of admittance to five out of every six who made application to enlist. A referendum of the admirals and captains of the Navy was held. Letters were addressed to them inviting their views upon the wisdom of effecting a radical change by which, instead of being punished under the old prison system, all sailors who violated the rules of the department by overstaying their leave, drunkenness, and the

like, were to be summarily dismissed from the service—that is, instead of incarcerating them as prisoners, they were to be discharged from the Navy with a dishonorable discharge, and their parents were to be notified of such discharge and the reason for it. There was a large majority of the officers who heartily approved the proposed change, some of them making valuable suggestions, which were adopted in General Order No. 110, which is of far-reaching import and which so modified the regulations as to permit the greatest freedom on the part of the enlisted men, who can obtain an honorable discharge when they have become dissatisfied with the service. It permits them to secure such discharge on request by merely the refund of certain allowances made by the Government upon their enlistment or reenlistment. The order goes a step further, and directs as a general policy that men who have offended by overstaying leave of absence, by drunkenness on shore, and similar breaches of discipline, shall be summarily dismissed instead of being imprisoned.

The order is a wide departure from former methods of dealing with the enlisted personnel who have not desired to remain in the service. Enlistments in the Navy have always been for a definite period—at present four years—and it has always been difficult and at times impossible for men to terminate their contract of enlistment by honorable discharge before the enlistment expired. If a man remained absent from his ship or duty after having been granted leave, this made him a deserter, and on conviction involved a prison sentence. The old plan involving long imprisonment created among enlisted men a feeling that during their term of enlistment, if they desired to leave the Navy, they were as if in bondage. Furthermore, this feeling on the part of the men that their services were required and they would be retained in the Navy regardless of their conduct doubtless, in a large measure, accounted for much of the absence over leave or absence without leave and other offenses which would never be tolerated in any well-organized business establishment on shore, but which at times have been quite prevalent in the service.

It was recognized in making the order that the Navy is in time of peace a very large business organization; that any feeling of compulsory detention or bondage on the part of the enlisted force is undesirable; that the service offers so many advantages, especially to those desiring to make of it a life work or secure a practical education, it can be kept fully recruited with men who are willing to obey, and the department therefore now holds that overstayed leave, drunkenness on shore, and similar offenses indicate that the offender is unfit for the service. These considerations led to the issuance of this new general order for summary discharge rather than imprisonment in

the matter of desertion, and to facilitate honorable discharge for those who are dissatisfied. In order not to be too drastic the order permits commanding officers, in their discretion, to hold a first offender on probation on reduced pay for periods of from 6 to 12 months, but on repetition of the offense he is summarily discharged. In order to promote the reformation of men who may lose pay by sentence of court-martial, it is provided that those who serve through an enlistment and receive an honorable discharge on its termination will have remitted all pay lost by sentence of court-martial during that enlistment.

The order is founded on business principles. The Navy is a business organization and an educational institution, as well as a fighting machine. It has no time for the drunkard, be it ashore or afloat, nor for those who in violation of their oath are not present and ready for duty when required. Such offenses indicate inherent unfitness for the naval service. The order improved discipline generally throughout the service. It reduced the number of naval prisoners and placed the enlisted personnel of the service on much the same basis as that occupied by the employees of any large industrial corporation. Considering the fact that the armies and navies of the world are notoriously conservative and slow to follow the gradual but none the less certain changes which are daily taking place in modern thought and methods, this is a radical step. It will weed from the Navy the undesirables and raise the general standard of the enlisted personnel and, even more than heretofore, render an honorable discharge from the service a credential of reliability, zeal, and efficiency.

The naval prisons and disciplinary barracks last year cost over \$1,000,000. Under the new plan this cost will be greatly reduced, and before a great while will be very small. A wise man once said that the worst possible use that could be made of a man was to hang him. It has been demonstrated that it is economically unsound in times of peace to spend large sums upon holding men in prison whose conduct has shown they are unfit for naval service. The department now summarily discharges such as show themselves to be unfit, lifts up the service, and gives an opportunity to those who are discharged to find positions in civil life where they may retrieve themselves and render better service than by being confined in naval prisons.

GENERAL ORDER NO. 99.

On the 3d of February, 1899, Hon. John D. Long, Secretary of the Navy in McKinley's administration, "after mature deliberation," as he said, issued General Order No. 508, forbidding officers or com-

mandants "to allow any malt or other intoxicating liquor to be sold to, or issued to, enlisted men, either on board ship or within the limits of navy yards, naval stations, or marine barracks, except in the medical department." On July 1 of the present year an order, No. 99, went into effect in these words: "The use or introduction for drinking purposes of alcoholic liquors on board any naval vessel or within any navy yard or station is strictly prohibited."

"Secretary Daniels's order," to quote ex-Secretary Long, "is the natural sequence of my own prohibiting liquors for enlisted men in the Navy," and this former Secretary added: "It is more than likely that foreign vessels will be led by this example to consider and imitate it, so that the drink evil in foreign navies may be put in process of elimination as well as our own." Within a few weeks after that prophecy not one but several foreign countries caught step and fell into line, some of them going so far as to prohibit the use of liquor in both army and navy. Of the new and far-reaching order in Russia, the most sweeping of all, Capt. N. A. McCully, of the United States Navy, naval attaché at Petrograd, writes: "Further acquaintance with Russia's anti-liquor law convinces me that it is one of the best things that ever happened in Russia. I have not met one single Russian who is not very much in favor of it."

Lord Kitchener, upon being appointed Secretary of State for War, issued this message to the soldiers of the expeditionary force: "Your duty can not be done unless your health is sound. So keep constantly on your guard against any excesses. In this new experience you may find temptation in both wine and women. You must entirely resist both temptations."

A cable from Panama, dated November 14 of the present year, conveys the information that Col. Goethals had on that day issued an order placing all persons engaged in canal transportation on a strict temperance basis. The order provides that all persons employed on the canal who have marine licenses must abstain absolutely from liquor. This includes pilots taking ships through the canal, the captains of tugboats, mates, and others.

The Surgeon General of the Army, Dr. Gorgas, whose sanitation work on the Isthmus gave him world-wide fame, in his annual report says that the rate of alcoholism in the Army was lower in the last fiscal year than since 1870, and he makes the observation that "this improvement strengthens the contention of those who disapprove the restoration of the canteen," and adds: "It is believed that the Army will be well rid of any system of supplying alcoholic drinks. There really appears to be no more reason why they should be sold on Government reservations to soldiers than there appears to be any reason for the regulation issue of grog of former days." One reason

for the decrease of alcoholism in the Army, according to Dr. Gorgas, is "the effect produced by the act of Congress stopping the pay of officers and enlisted men when incapacitated for duty on account of sickness due to drug addiction, alcoholism, or other misconduct." Similar legislation was recommended last year for the Navy and Marine Corps, and the experience of the Army is an unanswerable argument for applying the same law to this branch of the service.

In announcing the order that ended the wine mess, as it was called, I made the following statement: "There should not be on shipboard, with reference to intoxicants, one rule for officers and another and a different rule for the enlisted personnel. I believe experience has demonstrated that a uniform rule should prevail in the Navy for all who enlist in the service, from the highest rank to the youngest enlisted man or officer who comes into the service, and that the abolition of the wine mess will be justified." Already many who did not welcome the new order are its strong advocates.

In connection with the new and better habits in all navies, it may be well to call attention to the statement of Emperor William of Germany; who, speaking some years ago to naval cadets at Murwick, recounted that when he was a cadet "It passed for extraordinary cleverness in the youth for him to imbibe a large quantity of alcohol and bear it. I, as a young officer, had occasion to see such examples, but never myself to participate." He went on to point out that such conduct "suited the Thirty Years' War, but not now," because "the service in my navy has reached such a height of strenuousness as you can hardly surpass," and he added:

"The next war and the next sea battle demand sound nerves of you. Nerves will decide. These become undermined through alcohol, and from youth up by the use of alcohol endangered.

"You will later have opportunity to see the target ships and the action of the modern projectiles upon the ships, and therefore you can picture the conditions during battle. You will see horrible destruction when you are upon these.

"Here it calls: 'Steady nerves and a cool head!'

"That nation which consumes the least quantity of alcohol wins; and that you should be, my gentlemen. And through you an example should be given the crews.

"And in consequence of this I expect of you that even now at the naval academy and on board ship in all comradeship and friendliness in no way disturbed among yourselves you take heed thereto and provide that the indulgence in alcohol be not counted as belonging to your privileges."

In his speech at Gibraltar in 1904 Sir Charles Beresford, C. B., gave utterance to a sentiment that finds more and more approval, just as Emperor William's address to the German youths entering

the Navy is accepted as necessary for the best efficiency of naval officers. Lord Beresford, as he now is, said at that time:

"When I was a young man I was an athlete. I used to box a great deal, ride steeplechases and races, play football, and go through a number of competitive sports and pastimes. When I put myself into training, which was a continual occurrence, I never drank any wine, spirits, or beer at all, for the simple reason that I felt I could get fit quicker without taking any stimulants. Now, I am an older man and have a position of great responsibility, often entailing quick thought and determination and instant decision: I drink no wine, spirits, and beer, not because they do me harm, not because I think it wrong to drink, but simply because I am more ready for any work imposed upon me, day or night: always fresh, cheery, and in good temper."

The order No. 99 was not issued by the Secretary until, at his request, the Surgeon General had made a report showing its wisdom. Not only has the order been approved by other nations, but the medical authorities of the world have given approval. In closing an editorial approving the action of the Navy, the Journal of the American Medical Association used these words:

"The development of scientific methods, and the use of instruments of precision in warfare have made alcohol absolutely detrimental to the modern naval man. Sea fights in the past were won by brute hardihood and physical endurance, which could, perhaps, be stimulated, temporarily at least, by large doses of alcohol. The modern warship is a floating laboratory of delicate and accurate machines. The gun pointer who directs a 14-inch rifle on the modern man-of-war needs not only personal courage, but also absolute steadiness of nerve, clearness of vision, and fine muscular coordination. All these things modern physiology has shown to be impaired by even small amounts of alcohol. The engineer who superintends the machinery at the heart of the modern battleship, the man at the wheel who directs its course, and the captain or the executive officer on the bridge, as well as the most humble member of the crew, need at all times to be in a condition of maximum physical and mental efficiency. Intoxication in the naval officer to-day might easily be as disastrous as cowardice and treason. Surg. Gen. Braisted's recommendations and Secretary Daniels's order are simply in line with our growing knowledge. The nation needs on its battleships to-day the most capable, clear-headed, cool-brained, and steady-handed men, and these men are not found among habitual or occasional users of alcohol in any form. Entirely aside from moral or sentimental reason, and considered simply as a scientific regulation in the interest of efficiency, this order will recommend itself to the vast majority of the American people."

RELIEF WORK OF THE NAVY.

The war in Europe surprised several hundred thousand Americans abroad, some without money and others unable to cash their American credits. The demoralized steamship service caused serious apprehension on the part of relatives and friends for their safe return. Congress made an appropriation to secure the return of Americans to their homes and for such relief as might be found necessary. This relief work was under the direction of the Secretaries of State, Treasury, War, and Navy, and the relief rendered was most grateful to Americans abroad. The Navy was privileged to participate in the characteristically zealous efforts of the Government of the United States to take care of its citizens by furnishing the *Tennessee* and the *North Carolina* to carry the officers in charge of relief and the funds, and when there was no further need for these ships in this special relief work they were ordered to the Mediterranean for the protection of Americans and American interests.

It is a matter of gratification that the Navy Department was enabled to be the carrier of the thousands upon thousands of Christmas presents collected by the press of America for the children of the warring countries of Europe. It chanced that it was necessary to send the collier *Jason* with coal for the *Tennessee* and *North Carolina* in the Mediterranean, and its large carrying capacity enabled the department to take to these children of Europe the gifts from the children of America. Their beautiful spirit of generosity touched the people on both continents. The naval officers, marines, and enlisted men entered cheerfully into this noble work, and within a few days these tokens of sympathy will be distributed to many children who have felt the pinch of poverty that follows in the wake of war.

THE OPENING OF THE PANAMA CANAL.

The great maritime powers of the world have been invited, and a number of them have accepted the invitation, to participate in the exercises incident to the opening of the Panama Canal. The international fleet and the ships of our own Navy escorting it will assemble at Hampton Roads in February, 1915, where they will be reviewed by the President of the United States. After the review they will sail for Cristobal; thence they will proceed to Balboa, on the Pacific side. The President will sail for the canal from Hampton Roads early in March and will reach the canal in time to board the *Oregon* with a distinguished party, including Capt. Clark, commander of the vessel on her famous trip around the continent, and that historic vessel will lead the international fleet through the canal. President Wilson will exchange visits with the President of the Republic of Panama, after which he will sail for California at the head of the fleet.

THE NAVY'S EXHIBIT AT SAN FRANCISCO.

In pursuance of its policy of publicity whereby the people may become better acquainted with the equipment and agencies of American defense, no pains have been spared to have the Navy represented at the Panama-Pacific International Exposition at San Francisco next year. The effort of the department has been to have the Navy itself in a large way appear at the exposition, and to that end a plan has been wrought out whereby a division of battleships, showing the principal types of modern men-of-war, including the hospital ship *Solace*, is to be anchored in the Golden Gate, while at the same time the historic *Oregon* and *Olympia* are to be moored alongside the exposition wharves. Exhibitions of aeronautics and submarine diving are contemplated, while the Marine Corps is to maintain a model camp. The 1915 cruise of Annapolis midshipmen will take place through the Panama Canal to the exposition. In addition to having the Navy, as it is, thus represented in force, in the liberal arts and machinery buildings will be set forth, both by an artistic cyclorama and by a series of warship models, the evolution of our Navy. The educational work of the Navy will be illustrated by a complete display of school pictures, as well as classes in daily recitation on ships in the harbor, and there will be many other features illustrative of the Navy's service to the country.

THE BARRY, MACDONOUGH, AND KEY ANNIVERSARIES.

As a people we have been less liberal in bronze and marble to the memory of our great sea-fighters than we have to statesmen and warriors. With the modern world-wide awakening to the importance of sea power, there has come in our country a new sense of appreciation of what Lincoln called "the web-footed arm" of the service. And this is well, for in our own history naval victories have more than once illumined a dark and gloomy hour in our early struggle for liberty, and dissipated by their brilliance the shadows of despair. The past year has fittingly been marked by several notable anniversaries in which due honor has been rendered to men who won glory for the Republic on the waters.

In May, in the presence of the President of the United States and distinguished guests, there was unveiled in Franklin Park in the Nation's Capital a bronze statue of John Barry, first commissioned captain in the American Navy, a pioneer officer whose daring and courage achieved heartening successes, and whose contemptuous spurning of a golden bribe must always be an inspiration to American youth.

On the shores of Lake Champlain, in September, the celebrations at Vergennes, Vt., and at Plattsburg, N. Y., rendered merited honor

to the joint heroes of that momentous and decisive conflict. The combination of the elements of foresight and preparedness with desperate courage, exhibited by Commodore Macdonough, commanding the Navy in that critical hour, saved the day, and as the last cloud of battle cleared away the eye of the sun saw the young Republic still free—and a new name on the roster of the Vikings.

In the same month of September the anniversary of Francis Scott Key's soul-inspiring song, "The Star-Spangled Banner," was brilliantly observed in Baltimore. The Navy was pleased to lend for the occasion that hoary centenarian of the sea, with a star-spangled name, the U. S. S. *Constellation*, rich in her record of Revolutionary victories, achieved under the flag immortalized by Key, and which shared the honors of the anniversary with the poem itself.

The Navy was fittingly represented in these festal hours of patriotism, and it was the privilege of the Secretary to participate in them all. The Union can not have too many of them. They fan the fires of love of country in the hearts of the people; and are an earnest to generations to come that the spirit of the fathers is the spirit of the sons!

CHAPLAINS.

The second session of the Sixty-third Congress signalized its interest in the spiritual welfare of the men of the Navy by authorizing the first increase in the corps of chaplains obtained since 1846, when the Navy was but half its present size. Last spring, when there was a possibility that men from all our battleships would see active service, there was not sufficient number of chaplains with the fleet, though every available one was ordered to duty. The increase allowed by last year's bill will enable the department in the future to assign a chaplain to every battleship. The new chaplains, in accordance with a provision of the law, will be appointed temporarily for three years, after which time they may be formally commissioned by the department.

MONEY ORDERS FOR BLUEJACKETS.

Since 1908 Navy mail clerks have been serving as postmasters aboard ship, but the one thing lacking to render postal facilities complete was the money-order feature, working a serious hardship to sailors who wished to send regular remittances home, as many thousands of them do. As a result of inclosing currency in letters periodical losses in transmission not infrequently caused actual hardships. The subject was recently taken up direct with the Postmaster General, who gave it his hearty approval, and as a result the system was inaugurated on board the ships of the Navy on the 1st day of October.

SAILORS' CLOTHING AT COST.

The condition of the Clothing and Small Stores Fund warrants a substantial reduction in the prices at which issues are made to the enlisted men, and during the coming year, therefore, all such issues will be made at cost, which means an annual saving to the men of about \$70,000. -

THE OCCUPATION OF VERA CRUZ.

On the 14th day of April orders were issued for the fleet to proceed to Mexican waters. The culmination of the indignities upon this country by Gen. Huerta in Mexico came in the arrest of the paymaster and boat's crew of the *Dolphin* at Tampico on the 6th of April. That ship carried, both at her bow and at her stern, the flag of the United States. Admiral Mayo, in charge of the naval vessels at Tampico regarded the arrest as so serious an affront as to warrant the demand that the flag of the United States be saluted with special ceremony by the military commander of the port. "The incident," said the President, in his special message to Congress delivered on the 20th of April, "can not be regarded as a trivial one, especially as two of the men arrested were taken from the boat itself—that is to say, from the territory of the United States—but had it stood by itself it might have been attributed to the ignorance or arrogance of a single officer. Unfortunately, it was not an isolated case. A series of incidents have recently occurred which can not but create the impression that the representatives of Gen. Huerta were willing to go out of their way to show disregard for the dignity and rights of this Government and felt perfectly safe in doing what they pleased, making free to show in many ways their irritation and contempt.

"A few days after the incident at Tampico an orderly from the U. S. S. *Minnesota* was arrested at Vera Cruz while ashore in uniform to obtain the ship's mail, and was for a time thrown into jail. An official dispatch from this Government to its embassy at Mexico City was withheld by the authorities of the telegraphic service until peremptorily demanded by our chargé d'affaires in person. So far as I can learn, such wrongs and annoyances have been suffered to occur only against representatives of the United States. I have heard of no complaints from other Governments of similar treatment. It was necessary that the apologies of Gen. Huerta and his representatives should go much further, that they should be such as to attract the attention of the whole population to their significance, and such as to impress upon Gen. Huerta himself the necessity of seeing to it that no further occasion for explanations and professed

regrets should arise. I therefore felt it my duty to sustain Admiral Mayo in the whole of his demand and to insist that the flag of the United States should be saluted in such way as to indicate a new spirit and attitude on the part of the Huertistas." Continuing, the President declared, "Such a salute Gen. Huerta has refused," and he asked and obtained approval from Congress to use the armed forces of the United States "in such ways and to such an extent as may be necessary to obtain from Gen. Huerta and his adherents the fullest recognition of the rights and dignity of the United States."

Before the fleet, under Rear Admiral Badger, reached the Mexican shores, it became necessary to issue orders to Admiral Fletcher, the ranking officer, to seize the port of Vera Cruz. In the early dawn of the 21st of April the sailors and marines landed, in pursuance of orders given, and seized the customhouse under a rain of fire. This shooting came not from the army of Huerta which had left the town, but from "snipers," who shot down our men from places of ambush. With courage which can not be too highly praised, the officers and men met the fire which poured upon them from unexpected quarters. In a remarkably short time they silenced all who opposed their entry, established order, and urged the civil authorities to resume their regular civic functions. Upon their unwillingness to do this, Admiral Fletcher took charge of the administration of the civil government, maintained order, and so reassured the people that they soon renewed their customary avocations. Upon the arrival of the Army, the Navy turned over the duty of occupation to that arm of the service, with a record of wise management which has been continued by the Army. The marines remained with the forces of occupation and won fresh laurels by their service. Having in mind the spirit of self-repression under provocation shown by Admiral Fletcher, and by him magnetically infused to his command, the Commander in Chief of the Army and Navy, in an address to the Annapolis cadets, paid this tribute to the admiral, who, because of his statesmanship and military qualities, happily blended, was eventually made commander in chief of the Atlantic fleet:

"I have been in almost daily communication with Admiral Fletcher, and I have tested his temper. I have tested his discretion. I know that he is a man with a touch of statesmanship about him, and he has grown bigger in my eye each day as I have read his dispatches, for he has sought always to serve the thing he was trying to do in the temper that we all recognize and love to believe is typically American."

The story of the bravery of the bluejackets and marines on that fateful morning has been told in prose and in poetry. The names of the 19 who sealed with their blood their devotion to their country

are written high on the roll of the immortals of their country. Here are the latest heroes of the Navy who fell at Vera Cruz:

George Poinsett of Pennsylvania,
Louis F. Boswell of Illinois,
Gabriel A. DeFabbio of New York.
Francis Patrick DeLowry of Pennsylvania,
Frank Devorich of Iowa,
Elsie Clingman Fisher of Mississippi,
Louis O. Fried of Louisiana,
Esan Hursh Frohlichstein of Alabama,
Dennis J. Lane of New York,
John Schumacher of New York,
Charles A. Smith of Pennsylvania,
Albin E. Stream of New York,
Walter L. Watson of Massachusetts,
Clarence R. Harshbarger of New York,
Henry Pulliam of Virginia,
Daniel Aloysious Haggerty of Massachusetts,
Samuel Marten of Illinois,
Rufus Edward Percy of New Hampshire, and
Randolph Summerlin of Georgia.

They gave not only all they were but all they hoped to be. Of the 19 who answered with the cheerful "Aye, aye, sir," on that fateful morning, 13 were 22 years of age or under. The oldest was 36, the youngest 19. Their average age was but a little over 23. They "were young, and suddenly beheld life's morn decline." The first to make the noblest contribution that man may make was George Poinsett, of the Commonwealth of Pennsylvania. The bodies of these brave sailors and marines were brought back to America, and every honor that might have been shown to an admiral was given them by their country and their countrymen. The ships bearing their bodies were escorted to New York City by naval vessels as a guard of honor, and a million people stood with uncovered heads as the funeral procession passed through the metropolis. The President of the United States, the governor of New York State, the mayor of New York City, the Secretary of the Navy, distinguished Navy and Army officers, and others assembled to express the national loss and the Nation's pride that now, as in every former period, it possessed men who were ready to serve their country and to give their lives in defense of the flag. In his address that day the President of the United States said:

"The feeling that is uppermost is one of profound grief that these lads should have had to go to their death; and yet there is mixed with that grief a profound pride that they should have gone as they did, and, if I may say it out of my heart, a touch of envy of those

who were permitted so quietly, so nobly, to do their duty. Have you thought of it, men? Here is the roster of the Navy—the list of the men, officers and enlisted men and marines—and suddenly there swim 19 stars out of the list—men who have suddenly been lifted into a firmament of memory, where we shall always see their names shine, not because they called upon us to admire them, but because they served us, without asking any questions and in the performance of a duty which is laid upon us as well as upon them. * * * As I stand and look at you to-day and think of these spirits that have gone from us, I know that the road is clearer for the future. These boys have shown us the way, and it is easier to walk on it because they have shown us how. May God grant to all of us that vision of patriotic service which here, in solemnity and grief and pride, is borne in upon our hearts and consciences!”

Medals, with letters of commendation to be attached to their records, have been sent by the Secretary of the Navy to all the enlisted personnel who were recommended for bravery and high service by Rear Admiral Fletcher. It is earnestly hoped that Congress will vote medals to the officers who showed gallantry. They can be thus honored only by an act of Congress. It is also recommended that Congress authorize the Secretary of the Navy to give such honor to officers who deserve it in the future without compelling those deserving such recognition to await the assembling of Congress and the passage of legislation authorizing the award of these medals of honor.

PROOF OF THE PREPAREDNESS OF THE NAVY.

The remarkable demonstration of the all-around efficiency of the Navy when the orders to Mexico were given won commendation at home and abroad. When Rear Admiral Badger, commander in chief, received the orders, he said: “I do not know what we will be called upon to do, but we are ready.” Within 24 hours after the directions to sail were flashed from the wireless at Arlington to the commander in chief the gray fighters were ready, and the giant ships slipped swiftly seaward and hurried to the waters of the Gulf. When needed to uphold the honor of the flag and the interests of the country, the Navy was ready. There were tens of thousands of tons of coal, supplies, provisions, ammunition, and war equipment to be gotten aboard the grim steel fighters, innumerable administrative details to be attended to, and a score of ships to be put in readiness, but, though there was fervent but perfectly disciplined activity, there came into play tense precision, trained energy of mind and eye and hand, so that almost before the country realized the purport of the orders, the work of preparation had been ended and the ships were en route to their destination. It showed the country that

the Navy is always ready—it lives in a state of preparedness—and that when the emergency arises every man in the Navy and the Marine Corps shows such enthusiasm and resourcefulness as to quicken the pride of their countrymen in them. The records show that one giant ship took on 1,800 tons of coal, provisions for 1,000 men for six weeks, huge quantities of various supplies, gathered up officers and men ashore and on leave, and was tugging at her anchor awaiting only the signal to proceed, all in a bare 12 hours. The get-away of the fleet and its efficiency in the waters of Mexico illustrate the energy, brain work, and teamwork which give signal proof of our national efficiency, an efficiency which is emphasized only to illustrate what may be expected of the Navy whenever it is called into action.

THE GOOD WORK OF THE MARINE CORPS.

The Marine Corps, with its 9,991 men and 339 officers, has added to its record for high service this year. It responded with characteristic promptness and efficiency to every call imposed upon it during a year in which its services were in almost constant demand. The Marine Corps saw service in Mexico, Nicaragua, Santo Domingo, and Hayti. At Vera Cruz they participated in the actions preceding our occupation of that city, and upon the arrival of the Army the marine brigade was incorporated in the command of Gen. Funston. At Hayti and Santo Domingo their services were of another character. Few were landed on Haytian soil, but during the elections at Santo Domingo a force of marines cooperated with State Department representatives at the polls. They have continued to garrison Managua, Nicaragua, since its occupation two years ago.

Last January and February the First and Second Regiments held the first advance base practice in the history of the corps. Plans for the work had been maturing for several years. The fleet participated in the exercises, which were most successful, and advanced-base drills, in the field and in cooperation with the fleet, will hereafter form a part of each year's drills. In furtherance of these plans and upon the recommendation of the General Board of the Navy, a redistribution of Marine Corps forces is about to be concluded. Several minor garrisons have been reduced and the proposed station on the Isthmus of Panama given over to the Army. This will permit the assembling of larger bodies of marines at Philadelphia, Norfolk, and San Francisco, and it is expected that much better results will be achieved thereby.

HEALTH CONDITIONS AT VERA CRUZ.

The health conditions of the fleet in Mexican waters and of the marines at Vera Cruz with the Army during the year have been

a source of great satisfaction to the department. Notwithstanding the long and monotonous duty, with periods when recreation ashore could not be given, and with all the attendant dangers of a tropical climate, both ashore and afloat the health of the personnel has been better than the average. In the fleet, with a complement as high at times as 20,000 men, and distributed on all types of vessels, from the largest man-of-war to torpedo boats, the rate of disease has fluctuated from 1.5 to 0.9 per cent. There have been no epidemics, nor any unusual manifestations of disease or unusual mortality, except the deaths in action (19 in number) at the time of the taking of Vera Cruz. Every preparation possible was made by the medical department at very short notice for this expedition, and the result reflects great credit on the medical department as a whole and on the medical officers of the individual ships.

The health of the Marine Corps during the long occupation of Vera Cruz has been unusually good. An average force of about 2,900 men has been maintained for service with the Army, and the average sick rate from May 13, 1914, to November 4, 1914, was 2.08 per cent. The highest rate was 3.3 per cent, on June 3, 1914, and the lowest rate was 1 per cent, as reported in the last returns for November 4, 1914. Since the early occupation of Vera Cruz there appears to have been a uniform improvement in health conditions. Finally, at the close of the long period of Mexican activities, the hospital ship *Solace*, after embarking all the sick demanding transfer home, not only from Vera Cruz, but from Guantanamo, Cuba, and the ships at Haiti, reports a total of 48 patients, of whom only 4 are stretcher cases. The Major General Commandant of the Marine Corps, writing to the Surgeon General, voices just appreciation for the skill and efficiency of the splendid medical corps:

"While you will undoubtedly receive official reports which will mention every detail of their work, I feel it my duty and pleasure to state to you that, in my opinion, the splendid showing as evidenced by the very small percentage of sick, both in Culebra and Vera Cruz, is very largely due to the Medical Corps of the Navy, who rendered such valuable assistance at all times, and if consistent with your ideas I think something should appear on the officers' records to show the appreciation of their excellent work."

THE HEROISMS OF PEACE.

Peace has her heroisms no less renowned than war. The year in the Navy has been interspersed with many individual acts of daring and presence of mind. Three officers and 59 sailors imperiled their lives to rescue men from drowning, for the commonest call to heroism aboard ship, now as ever, is the cry of "Man overboard."

Many other officers and men share in the brilliant rescue work of the year, for which either medals or letters of commendation were issued as expressive of the department's gratitude, and their names are printed as a roll of honor in the appendix to this report. These calls to perilous and self-sacrificing service included among others the rescue of men overcome by coal gas in a collier's bunkers; extinguishing fire in a war-head filling house, and again in a gasoline tank; rendering assistance to a stranded vessel; entering the boiler of a battleship on its trial; bravery in engine room after collision and explosion; entering the hold of a vessel filled with poisonous fumes in order to rescue shipmates; disarming or rescuing insane men, and the like. A most unusual achievement for which departmental gratitude was called forth was a piece of impromptu civil engineering on the part of a hospital steward and a blacksmith in constructing a five-mile trail over a well-nigh impossible route in Alaska, for the purpose of transporting coal to the coast by sled in the dead of a far-northern winter, and this task was achieved under the eye of a Navy surgeon.

Carlyle, in his "Hero Worship," depicts the hero, in the six chapters of the book, respectively, as divinity, as prophet, as poet, as priest, as man of letters, and as king. The great author might well have added a chapter on the hero as man of the sea. No ear is keener to hear the cry of the drowning and no heart is less appalled over the sudden apparition of death in its most hideous forms than the sailor's. Is it not this dauntless spirit, which we thus see in the bud in time of peace, that bourgeons forth into the full flower of bravery in the hour of national defense?

HOPE FOR INTERNATIONAL AGREEMENT.

In my last report the hope was expressed that the day would come when the big-navy building nations would reach an international understanding to put an end to the feverish competitions in the building of costly engines of destruction. The naval appropriations in our own country have doubled in a dozen years, and have gone up by leaps and bounds in other countries. If this mad rivalry in construction goes on the burden will become too heavy for any nation to bear. The present war, involving most of the big-navy countries of Europe, does not render such an international agreement impossible. On the contrary, there are reasons to hope that the horrors and cost of this war will hasten the coming of the day for a conference of the powers to consider the safe steps to be taken to reduce armament and dreadnaughts and submarines. It may not be opportune at this time for our Republic to move for such a conference, but when peace smiles upon this war-torn globe there may

be reserved for America the coveted honor of initiating a movement which will make possible a reduction of fighting craft without imperiling the rights of any peoples. Is it too much to believe this generation will witness such an agreement, and men now living will see the good hour prophesied by Tennyson when—

“the war-drum throbb’d no longer, and the battle-flags were furled,
In the Parliament of man, the Federation of the world.”

A PROUD AND SOLEMN YEAR.

This has been a proud and solemn year for the American Navy. It has shown that it knows how to bear itself under fire, how to obey orders, how to maintain the honorable traditions of the service. Allow me, Mr. President, to congratulate you as its Commander in Chief upon the record it has made, upon its preparedness for duty, upon the reliance you can place upon it in any time of national need.

Sincerely, yours,

JOSEPHUS DANIELS.

APPENDIX A.

REPORT OF THE GENERAL BOARD.

DEPARTMENT OF THE NAVY,
GENERAL BOARD,
Washington, November 17, 1914.

To: Secretary of the Navy.

Subject: Increase of the Navy; building program and personnel, 1916.

Reference: Department's indorsement 8557-146:11, September 22, 1914.

Article 167, paragraph 3, United States Navy Regulations, 1913, reads as follows:

“It (the General Board) shall consider the number and types of ships proper to constitute the fleet, the number and rank of officers, and the number and rating of enlisted men required to man them, and shall advise the Secretary of the Navy respecting the estimates therefor (including such increase as may be requisite) to be submitted annually to Congress.”

The General Board in compliance with duties thus imposed upon it by this and similar paragraphs in preceding regulations has from year to year recommended to the department a building program and personnel legislation that would, in its opinion, produce a fleet that would be adequate to the needs of the Nation.

2. In view of conditions now existing the General Board has given particularly careful thought to its recommendations for the coming fiscal year. To make its position clear and place before the department the full meaning of its recommendations, the General Board considers it necessary to review at length all that has preceded these recommendations and led up to them.

CONSISTENT POLICY OF GENERAL BOARD SINCE 1903.

3. In its letter No. 420-2, of October 17, 1903, the General Board, after mature consideration of our national policies and interests, and of those of the other leading naval nations of the world, expressed its opinion of what the ultimate strength of the United States Navy should be, and recommended a program for the completion of the Navy to the strength then believed adequate by 1919.

4. The basis of the fleet recommended was 48 battleships; and lesser units and auxiliaries were recommended in the proportions believed to be best to complete a fighting fleet, in the light of the best information obtainable at that time. The influence of the progress made by new inventions and the discovery of new ideas in the development of the lesser units have changed the proportions and character of some of these lesser units; and have, to that extent, modified the original recommendations of the General Board. But the fundamental fact that the power of a fleet is to be measured by the number and efficiency of its heavy fighting units, or battleships, has remained unchanged. The recommendations of the General Board heretofore submitted have consistently followed a policy looking to the creation of a fleet founded on a battleship strength of 48, in accordance with its recommendation made in 1903, of what it considered an adequate fleet to meet the naval needs of the Nation and be an adequate insurance against aggression.

5. The General Board believes that these recommendations made from year to year have been both misunderstood and misconstrued in some quarters. An impression prevails that the General Board has always recommended an annual continuing building program of four battleships, with accompanying lesser units and auxiliaries. A brief analysis of the recommendations made by the General Board, beginning with the original formulation of its policy in 1903, to the present time, will demonstrate the error of this impression, and show that the recommendations made were consistent and contemplated the creation of a battleship fleet of 48 vessels by 1919, *but did not involve a constant and fixed program of building four battleships a year.*

BATTLESHIPS.

6. In October, 1903, the Navy had 10 battleships completed and 14 more either under construction or authorized. The last of these 14 was to be completed by 1907. In view of this condition, and to complete a fleet of 48 battleships by 1919, the General Board in paragraph 8 of its letter of October 17, 1903, recommended:

"8. To sum up, the General Board recommends that Congress be requested to authorize for the present a yearly building program, not limited by the amount appropriated last year, composed of the following ships: Two battleships, etc."

To this letter was appended a table, quoted below, showing what the condition of the Navy would be in battleships, year by year, to 1919, starting with the 10 completed and 14 already building or authorized, if the recommendation of the General Board for a two-battleship per year program from 1904 were followed.

Year.	Battleships.		Year.	Battleships.	
	Completed.	Authorized.		Completed.	Authorized.
1903.....	10	14	1912.....	34	2
1904.....	12	2	1913.....	36	2
1905.....	17	2	1914.....	38	2
1906.....	19	2	1915.....	40	2
1907.....	24	2	1916.....	42	.....
1908.....	26	2	1917.....	44	.....
1909.....	28	2	1918.....	46	.....
1910.....	30	2	1919.....	48	.....
1911.....	32	2			

7. It will be seen from the foregoing table that the General Board's recommendation provided for a *two-battleship program* consistently pursued from 1904 to 1915 to provide a fleet of 48 battleships by 1919. In these recommendations replacements were not considered, nor had limits of age been placed on battleships. The fundamental idea, however, was a two-battleship program to provide a fleet of 48 battleships by 1919. A larger program to hasten the completion of the fleet had been considered, but had been rejected because it was believed a fleet of 48 battleships by 1919 would answer all needs, in view of the known building programs of other countries.

8. In pursuance of this policy the General Board, as stated above, began its yearly recommendations by asking that two battleships be authorized in 1904. The following table shows the yearly programs recommended. The reasons for an increase over two battleships annually are given in succeeding paragraphs.

Battleships.			Battleships.		
Year.	Recom- mended by General Board.	Authorized by Congress.	Year.	Recom- mended by General Board.	Authorized by Congress.
1904.....	2	1	1909.....	4	2
1905.....	3	2	1910.....	4	2
1906.....	3	1	1911.....	4	2
1907.....	2	1	1912.....	4	1
1908.....	4	2	1913.....	4	1

9. The recommendation for the laying down of two ships in 1904 failed of enactment, and only one was provided for, leaving the program for the creation of a 48-battleship fleet by 1919 one ship in arrears. To make this deficiency good, and maintain the general program, one additional ship, or three in all, were recommended for the 1905 program. Two were authorized, still leaving a deficiency of one for the two years, 1904 and 1905. To provide for this three were again recommended for the 1906 program. In 1906 and again in 1907 one ship only was authorized, leaving by 1908 the general program three ships in arrears. To begin making this deficiency good the General Board for the 1908 program recommended the authorization of four ships. From 1908 to 1911, inclusive, Congress followed the original program and provided for two battleships yearly. The accumulated shortage of three ships still remained, however, during these four years, and the General Board recommended year by year the laying down of four ships to begin making this good, since each succeeding year found the shortage still there.

10. In 1910 a new element entered, not considered in the original program. The fleet of 48 battleships contemplated in the program put forward in 1903, on a two-battleship per year building program, to be ready by 1919, contained all battleships then borne on the list, beginning with the *Indiana*. Experience had not yet in 1903 demonstrated the effective life of battleships, nor had any exhaustive study been made of it. Beginning with the program recommended for 1911 in General Board's letter No. 420-2 of May 24, 1910, this matter was seriously taken into consideration, since experience had shown that the three older battleships, the *Indiana*, *Massachusetts* and *Oregon*, then 20 years old from date of authorization, were approaching the limit of their effective life. Further studies from our own experience and from that of other navies, and from practice abroad convinced the General Board that the effective life of battleships is about 20 years from time of completion; and that hence, to maintain a fleet at a given strength, it is necessary to lay down a replacement ship 20 years from the time of the laying down of the original ship. Hence, replacement ships for the *Indiana*, *Oregon* and *Massachusetts* should have been laid down in 1910, for the *Iowa* in 1912, and new replacement ships should be begun for the *Kentucky* and *Kearsarge* in 1915. These matters, together with the shortage of three battleships already existing in 1911, were taken into consideration by the General Board in making its recommendations for a four-battleship program in both 1912 and 1913. One battleship only was authorized in each of these two years, increasing the shortage in the original program to five, without considering replacement ships for the *Indiana*, *Oregon*, *Massachusetts* and *Iowa*, already overdue for authorization.

11. The preceding analysis shows clearly the error in the prevailing impression that the General Board has heretofore advocated a navy based on a continuous building program of four battleships a year, and proves that up to the present it has advocated continuously and consistently a program to produce a fleet of 48 battleships by 1919. This would have called for, considering replacements, a general two-battleship program with a third added every three years. The number of battleships called for by this policy, 48, and

the date set for their completion, by 1919, were fixed by a calm and logical review of the policies and aims of the Nation and the known laws and prospective developments and aims of other countries; and the policy was to provide and maintain at all times *a fleet equal to or superior to that of any nation likely to challenge our policies.*

12. The 1903 program given in paragraph 6 of this letter, as modified by the replacement policy in 1910, called for at this date, November, 1914:

(a) Effective battleships completed and ready for service, less than 20 years old from completion	38
(b) Battleships under construction	7
(c) Battleships authorized in 1914	2
Total	47

13. The actual situation of the fleet as relates to battleships at this date, November, 1914, is as follows:

(a) Effective battleships completed and ready for service, less than 20 years old from completion (since the sale of the <i>Mississippi</i> and <i>Idaho</i>)	30
(b) Battleships under construction	4
(c) Battleships authorized in 1914	2
(d) To replace <i>Mississippi</i> and <i>Idaho</i>	1
Total	37

14. This shows that we are now deficient 10 battleships, built, building, and authorized, from that contemplated in the 1903 program.

15. The General Board has made the foregoing brief analysis to set forth clearly the reasons for and meaning of all the recommendations it has made for battleship construction up to this time; and to show the conception under which the General Board has acted in the performance of its duty, under the Regulations, as the responsible advisers of the Secretary in all matters relating to the strength of the fleet, and the number and character of the units composing it. In the matter of battleships, the final result of all recommendations, and of all action taken thereon up to this date, has been to produce a completed battle line of 8 units less than the General Board believed to be safe, and with 2 units less under construction and authorized than was needed to continue the expansion of the fleet to the strength laid down in the policy.

16. The General Board believes the policy it has consistently advocated for the production of an adequate Navy is to the best interests of the country, and that any Navy less than adequate is an expense to the Nation without being a protection. It can not, therefore, too strongly urge the adoption by the Government of a policy looking to the making good of the deficiencies of the past, and the building up of this arm of the national defense until it becomes equal to the task that war will put upon it. That point will not be reached until the Navy is strong enough to meet on equal terms the strongest probable adversary.

17. The wisdom of such a policy is well illustrated by recent events, and is reinforced by the teachings of all history. For a review of the history of all ages will show that no nation has ever created and maintained a great over-sea commerce without the support of sea power. It will further show that trade rivalry, which is the active expression of the most universal of all human traits—desire for gain—has been a most fruitful cause of war; and, when the clash has come, the commerce of the weaker sea power has been broken up and driven from the seas. That has been true for all time, and is true to-day; and has a particular bearing on the United States at the present time, when such strenuous efforts are being made to build up a national merchant marine and extend our foreign commerce.

18. In the matter of national defense, history teaches still another great lesson particularly applicable to ourselves. That is, that a nation, insular in character or separated by bodies of water from other nations can and must rely on its Navy—when that Navy is adequate—for protection and freedom from invasion and may keep its own soil free from all wars other than civil. The United States is one among the few nations of the world that occupy this happy position, being insular in so far as any nation capable of making serious war upon us is concerned, since any opponent that need be considered must come to us from across the seas. Our main defense and protection from invasion must, therefore, always rest with the Navy, which must ever remain our first and best line of defense. This defense, unless adequate, is

impotent; and, as before stated, adequacy is not reached until the Navy is strong enough to meet on equal terms the Navy of the strongest probable adversary.

19. In the matter of battleships the General Board remains of the opinion that it has always held, that command of the sea can only be gained and held by vessels that can take and keep the sea in all times and in all weathers and overcome the strongest enemy vessels that may be brought against them. Other types are valuable and have their particular uses, all of which are indispensable, but limited in character. But, what has been true throughout all naval wars of the past, and what is equally true to-day, is that the backbone of any navy that can command the sea consists of the strongest sea-going, sea-keeping ships of its day, or, of its battleships. The General Board recommends, therefore, in the light of all the information it has up to this present date that the development of the battleship fleet be continued as the primary aim in naval development, and that four (4) of them be authorized in the 1916 program.

DESTROYERS.

20. For the general purposes of war on the sea the General Board has placed the destroyer as the type of warship next in importance to the battleship, and has based the programs it has recommended on that idea. After very mature consideration of all the elements involved and a study of the results obtained from fleet maneuvers, the General Board came to the conclusion that a well-balanced fighting fleet, for all the purposes of offense and defense called for a relative proportion of four destroyers to one battleship. Hence, for every battleship built four destroyers should be provided. The General Board still holds this opinion and, therefore, recommends that sixteen (16) destroyers be provided in the 1916 program.

FLEET SUBMARINES.

21. For several years past all leading navies have been striving to perfect a submarine of an enlarged type with habitability, radius, and speed sufficient to enable it to accompany the fleet and act with it tactically, both in offense and defense. Our designers and builders have been devoting their efforts to the same end and are now ready to guarantee such a type and one such vessel was provided for in the appropriation act of 1914. The great difficulty in the past in the production of this type has been the lack of a reliable internal combustion engine of the requisite power to give the necessary speed. This difficulty has been overcome, and the General Board is assured that engines have been designed and fully tested that will meet the requirements; and the builders stand ready to guarantee the results. The value of such a type in war for distant work with the fleet can hardly be overestimated, and the General Board recommends that three (3) be provided in the 1916 program. These with the one already authorized, will form a fleet submarine division of four for work with the fleet, and be the beginning of a powerful arm of the fleet.

COAST SUBMARINES.

22. For the submarine for coast defense and for occasional acting with the fleet in home waters, the General Board sees no necessity for boats of as great speed and size as the later designs, made before the sea-going submarine was believed to be in sight. In fact, any increase of size is detrimental, in that it increases draft and debars them from shallow waters; and any increase of speed in this class of submarines is not needed, and is gained at the expense of other desirable qualities. Between the coast-defense submarine and the submarine of sufficient size, radius, habitability, and surface speed to accompany and act with the fleet tactically, the General Board sees no necessity in naval warfare for an intermediate type. It is therefore recommended that the submarines for the coast work be of the general characteristics already prescribed in General Board letter No. 420-15, of June 10, 1914, and that sixteen (16) of these be provided for in the 1916 program.

SCOUT CRUISERS.

23. In the struggle to build up the purely distinctive fighting ships of the Navy—battleships, destroyers and submarines—the cruising and scouting element of the fleet has been neglected in recent years, and no cruisers or scouts

have been provided for since 1904, when the *Montana*, *North Carolina*, *Birmingham*, *Chester* and *Salem* were authorized. This leaves the fleet peculiarly lacking in this element so necessary for information in a naval campaign, and of such great value in clearing the sea of torpedo and mining craft, in opening and protecting routes of trade for our own commerce, and in closing and prohibiting such routes to the commerce of the enemy. The General Board believes that this branch of the fleet has been too long neglected and recommends that the construction of this important and necessary type be resumed. For the 1916 program it is recommended that four (4) scout cruisers be provided.

AIR CRAFT.

24. The General Board in its endorsement No. 449 of August 30, 1913, and accompanying memorandum brought to the attention of the department the dangerous situation of the country in the lack of air craft and air men in both the naval and military services. A résumé was given in that endorsement with the accompanying memorandum of conditions in the leading countries abroad at that date, showing the preparations being made for air warfare and the use of air craft by both armies and navies, and contrasting their activity with our own inactivity. Certain recommendations were made in the same endorsement looking to the beginning of the establishment of a proper air service for the Navy.

25. The total result of that effort was the appointment of a board on aeronautics October 9, 1913. That board made further recommendations, among them the establishment of an aeronautic school and station at Pensacola and the purchase of 50 aeroplanes, 1 fleet dirigible, and 2 small dirigibles for training. At the present time, more than a year later, the total number of air craft of any kind owned by the Navy consists of 12 aeroplanes, not more than two of which are of the same type, and all reported to have too little speed and carrying capacity for service work.

26. In view of the advance that has been made in aeronautics during the past year, and the demonstration now being made of the vital importance of a proper air service to both land and sea warfare, our present situation can be described as nothing less than deplorable. As now developed air craft are the eyes of both armies and navies, and it is difficult to place any limit to their offensive possibilities.

27. In our present condition of unpreparedness, in contact with any foe possessing a proper air service, our scouting would be blind. We would be without the means of detecting the presence of submarines or mine fields or of attempting direct attack on the enemy from the air, while our own movements would be an open book to him. The General Board can not too strongly urge that the department's most serious thought be given to this matter, and that immediate steps be taken to remedy it, and recommends that Congress be asked for an appropriation of at least \$5,000,000, to be made available immediately, for the purpose of establishing an efficient air service.

GUNBOATS.

28. The Navy is very deficient in gunboats. Though the Navy list gives 30 names under "gunboats," only a very limited number of these 30 are in a condition to be available for general service. Some, like the *Villalobos*, *Callao*, *Samar*, *Sandoral*, etc., are old boats of little value taken over from Spain, of from 400 to 250 tons and less. Of the others, with the exception of the light-draft river gunboats *Monocacy* and *Palos*, and the *Sacramento*, no gunboats have been authorized since 1902. Seven are at present assigned to Naval Militia duty, and three others have been recently withdrawn from that service because of the crying need for more gunboats for general duty. Those remaining on the list serviceable and fit for general duty are so limited in number that it has been necessary in recent years to detail battleships, large cruisers, and destroyers to do gunboat duty. This has been markedly demonstrated during the past year on the Mexican coast. It would seem superfluous to point out the harmful influence this has on the efficiency and training of the fleet for war, and the General Board advises strongly against such practice whenever it can be possibly avoided. It is therefore recommended that a beginning be made to replace the old and worn-out gunboats, that there may be sufficient of them to do the police and general diplomatic duties required of such vessels in time of

peace without disrupting the battle fleet. To this end it is recommended that four (4) be authorized in the 1916 program. With the exception of the *Sacramento*, authorized in 1911, no seagoing gunboat has been authorized since 1902.

AUXILIARIES.

FUEL SHIPS.

29. In the matter of auxiliaries needed for the fleet the General Board is of the opinion that the most serious situation exists in the matter of fuel-oil supply, and that provision for oil-fuel ships should be given first consideration. This is serious from the point of view of economy in time of peace, and would be disastrous in the event of hostilities arising. We have 41 oil-burning destroyers built or building, to be followed by others, 8 ships of the dreadnaught type using oil as an auxiliary fuel, and in 1915 the two first all-oil-fuel battleships will be added to the fleet, to be followed by others. To supply this oil-burning fleet with fuel the Navy possesses the *Arcthesa*, an old tank ship of 3,629 tons capacity and not more than 10 knots speed, and seven fleet colliers fitted to carry some fuel oil in addition. The total oil capacity is 23,723 tons, 3,629 tons of which—that in the *Arcthesa*—could not accompany the fleet; so that the present available oil supply that could accompany the fleet is 20,109 tons. Logistic studies show that to maintain our present oil-burning fleet in active service across the ocean requires the delivery of about 23,000 tons of fuel oil per month. To maintain this supply we have the seven colliers mentioned above capable of delivering an average of about 10,000 tons per month. This situation will be very much aggravated on the addition to the fleet of the two all-oil-burning battleships, *Oklahoma* and *Nevada*, and the other destroyers now under construction. Nor can commercial oil carriers be relied upon to remedy this deficiency, since ocean tankage both at home and abroad is not yet adequate to meet the demands of commerce and industry.

30. To partially meet this situation two oil-fuel ships of a combined cargo capacity of 15,108 tons were authorized in August, 1912. On November 1, 1914, one of these ships was only 82.4 per cent completed and the other only 57.2 per cent completed.

31. To remedy this serious defect in our preparedness for war the General Board recommended the construction of two (2) oil-fuel ships in the 1915 program. These were not authorized and the General Board therefore emphatically repeats this recommendation for the 1916 program, and further recommends that the construction of the two ships authorized in August, 1912, more than two years ago, be hastened with all possible speed.

DESTROYER TENDERS AND SUBMARINE TENDERS.

32. The auxiliaries of next importance to the fleet at the present time, after the oil fuel ships, are destroyer tenders and submarine tenders. Of the three improvised vessels used as destroyer tenders the *Iris*, built in 1885, is past her period of usefulness and should be replaced. The General Board recommended one (1) destroyer tender in the 1915 program. This was not authorized, and the recommendation is repeated for the 1916 program.

33. Of the six vessels used as submarine tenders, all are of the improvised variety, and none is well fitted for the service. Three of them are old monitors, two of them old gunboats, and one the old sailing ship *Serern*. To begin replacing these, one submarine tender was authorized in 1911, another in 1912, and one (1) was recommended in 1913 for the 1915 program. This last was not authorized, and this recommendation is repeated for the 1916 program.

TRANSPORTS.

34. The General Board has from time to time, in numerous letters extending over a series of years, called the attention of the department to the inadequacy of preparation in the Navy for advanced base work and to the vital importance of this work to success in war. The prerequisite for any advanced base work is the necessary means for transportation of the personnel and material of the advanced base outfit; and for this reason the General Board has recommended the construction of the two transports needed for the purpose—ships of the size and speed necessary and especially designed for what they were intended to

accomplish. Their primary use was to be for war, but secondarily they could be used in general transportation service at all times. Not one of the four improvised transports now in service in the Navy—the *Hancock*, *Rainbow*, *Prairie* and *Buffalo*—is of the size, or is fitted, for the work required, nor of the character of construction needed for safety in ships carrying large bodies of men. All are old single-skin ships without proper water-tight subdivision. Of the two transports needed, one was authorized in 1913, and the other recommended in the 1915 program. This was not authorized, and the General Board repeats this recommendation for the 1916 program.

HOSPITAL SHIP.

35. The General Board in making the foregoing recommendations has given preference to what is needed for the fighting efficiency of the fleet over all other matters. Two other types of auxiliaries, however, are required for the successful administration of the fleet—hospital and supply ships.

36. The two hospital ships now borne on the Navy list—the *Solace* and the *Relief*—are both improvised and small, and neither adapted to the service. They have done good service in time of peace in connection with subdivisions of the fleet, but the *Relief* is now unseaworthy and the *Solace* would be of limited value in time of war. To remedy this defect, the General Board recommended the construction of one (1) hospital ship in the 1915 program. This was not authorized, and the General Board repeats this recommendation for the 1916 program.

SUPPLY SHIPS.

37. Of the four ships borne on the Navy list as supply ships, all are improvised and were hurriedly bought and fitted in 1898 to meet the exigencies of the Spanish War. The *Supply* is already beyond her period of usefulness, and has been discarded as a supply ship. The *Culgoa* is approaching her limit of usefulness. The *Celtic* and *Glacier*, while old and inadequately fitted, are still good for some years service. One new ship was authorized in 1913. Another is needed, and to meet this situation the General Board recommended the construction of one (1) supply ship in the 1915 program. This was not authorized, and the General Board repeats this recommendation for the 1916 program.

SUMMARY.

38. To summarize, the General Board recommends for the 1916 program—

- 4 battleships.
- 16 destroyers.
- 3 fleet submarines.
- 16 coast submarines.
- 4 scouts.
- 4 gunboats.
- 2 oil-fuel ships.
- 1 destroyer tender.
- 1 submarine tender.
- 1 Navy transport.
- 1 hospital ship.
- 1 supply ship.
- Air service—\$5,000,000.

PERSONNEL.

39. The General Board can not too strongly urge upon the department the necessity of using its best endeavors to carry out the repeated recommendations of the General Board, made from year to year, to provide the fleet with a personnel, active list and trained reserve, equal to the manning of the fleet for war.

40. In the opinion of the General Board this is a matter of even more serious import than that of construction, for it can not be too often repeated that ships without a *trained* personnel to man and fight them are useless for the purposes of war. The training needed for the purpose is long and arduous, and can

not be done after the outbreak of war. This must have been provided for long previous to the beginning of hostilities; and any ship of the fleet found at the outbreak of war without provision having been made for its manning by officers and men trained for service can be counted as only a useless mass of steel whose existence leads only to a false sense of security.

41. The strength of fleets is measured too often in the public mind by the number and tonnage of its material units. The real strength of a fleet is a combination of its personnel—with their skill and training—and its material; and of these two elements the more important—the personnel—is too often forgotten and neglected in making provision for our fleet. The General Board can not impress this point too strongly on the department or recommend too earnestly that every effort be made to correct it, and that legislation be urged to provide for a personnel on the active list, supplemented by a trained reserve, sufficient to man every vessel of the fleet when the call comes.

42. No nation in time of peace keeps all the ships of its Navy fully manned and in full commission. But all leading nations except ourselves provide an active list, officers and men, sufficient to keep the best of their fleet in full commission and all the serviceable ships of their fleet in a material condition for war; and in addition a trained reserve of officers and men sufficient to complete the complements and fully man every serviceable ship of their navies, and furnish a reserve for casualties. Thus, every nation with which conflict is possible is prepared to mobilize its entire navy, by order, with officers and men trained for the service. We alone of the naval powers provide no such reserves, and an active personnel too scant, and trust to the filling of the complements of our ships by untrained men recruited after war is imminent or declared. To quickly man all of the ships of the Navy serviceable for war (including ships which are now in reserve or ordinary) with trained crews is impossible owing to the absence of a trained reserve.

43. In view of all that has been herein set forth, the General Board recommends:

(a) That legislation be asked for providing an active personnel, officers and enlisted force, capable of keeping in full commission all battleships under 15 years of age from date of authorization, all destroyers and submarines under 12 years of age from authorization, half of the cruisers and all gunboats, and all the necessary auxiliaries that go with the active fleet; and of furnishing nucleus crews for all ships in the Navy that would be used in time of war, and the necessary men for the training and other shore stations.

(b) That the general policy be adopted of expanding the active personnel with the expansion of the fleet in the proportions indicated in (a)

(c) That immediate steps be taken to form a national naval reserve of trained officers and men, and that this work be pushed until this reserve in connection with the Naval Militia has reached the point where, combined with the active list, it will be possible to fully man the entire fleet with war complements and furnish 10 per cent additional for casualties.

(d) That the Naval Militia be expanded in number and that the department encourage the continuance and improvement of its training to the end that it may still more efficiently serve to reinforce the regular service at need.

GEORGE DEWEY.

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REPORT OF THE JUDGE ADVOCATE GENERAL.

NAVY DEPARTMENT,
OFFICE OF THE JUDGE ADVOCATE GENERAL,
Washington, September 14, 1914.

From: Judge Advocate General.

To: Secretary of the Navy.

Subject: Annual report of the Judge Advocate General of the Navy.

The following is a report of the operations of this office for the fiscal year 1914:

Capt. Robert L. Russell, United States Navy, was relieved by me as Judge Advocate General on November 5, 1913.

DUTIES

The duties of the Judge Advocate General are prescribed by article R 134, United States Navy Regulations, 1913. These duties naturally subdivide themselves under the following headings:

- I. Administration of justice.
- II. Officers' records (including examinations, etc.).
- III. Legislation.
- IV. Miscellaneous.
- V. Legal matters.

I.

ADMINISTRATION OF JUSTICE.

Under this heading may be grouped boards of inquest, boards of investigation, courts of inquiry, general courts-martial—department, station, and fleet cases—reviewing records of summary courts-martial and deck courts, duties relating to convening and dissolving courts and boards, framing specifications, the supervision of naval prisons and prisoners, and correspondence from prisoners' families, friends, attorneys, etc., in their behalf.

The following tables show the operations of this office under the various subheadings:

COURTS OF INQUIRY, BOARDS OF INVESTIGATION, AND BOARDS OF INQUEST.

The records of courts of inquiry, as set forth in the following table, are in large part made up of the records of preliminary investigations conducted by boards of investigation and boards of inquest, and in like manner the records of boards of investigation are in many cases made up of the records of preliminary investigations conducted by boards of inquest. In such cases the records of the preliminary investigation were reviewed in conjunction with the record of proceedings of the final investigation.

Courts of inquiry received and revised.....	77
Courts of inquiry followed by courts-martial.....	12
Courts of inquiry followed by action other than courts-martial.....	13
Courts of inquiry in which no further action was deemed necessary.....	52
Boards of investigation received and revised.....	129
Boards of inquest received and revised.....	55

GENERAL COURTS-MARTIAL.

Charges and specifications drawn up in this office during the fiscal year.

	Navy.	Marine Corps.	Total.
Officers.....	21	4	25
Enlisted men.....	1,157	296	1,453
Total trials ordered by the Secretary of the Navy.....	1,178	300	1,478
Charges withdrawn:			
To other courts-martial.....			1
On account of physical disability.....			6
Prisoners escaped.....			3
By order of the department.....			2
Nolle prosequi.....			2
Charges drawn but trials not completed before end of fiscal year.....			2
Plea in bar sustained.....			1
Total trials not completed.....			21
Cases tried by order of the Secretary of the Navy.....			1,457
Corresponding trials fiscal year 1913.....			1,385

Trials held at each naval station.

Portsmouth, N. H.....	23
Boston, Mass.....	101
New York, N. Y.....	455
Philadelphia, Pa.....	247
Norfolk, Va.....	229
Mare Island, Cal.....	205
Puget Sound, Wash.....	107
Charleston, S. C.....	30
Newport, R. I.....	11
Port Royal, S. C.....	18
Camp Elliott, Isthmian Canal Zone, Panama.....	12
Special.....	19
Total.....	1,457

Trials by order of officers of the Navy authorized to convene general courts-martial.

	Navy.	Marine Corps.	Total.
Officers.....	15	1	16
Enlisted men.....	203	78	281
Total.....	218	79	297
Corresponding trials, fiscal year, 1913.....	208	102	310

Total trials.

	Navy.	Marine Corps.	Total.
Officers:			
By order of the Secretary of the Navy.....	21	4	25
By order of officers of the Navy.....	15	1	16
Total.....	36	5	41
Enlisted men:			
By order of the Secretary of the Navy.....	1,139	293	1,432
By order of officers of the Navy.....	203	78	281
Total.....	1,342	371	1,713
Grand total.....	1,378	376	1,754
Fiscal year, 1913.....	1,319	376	1,695

Trials of officers.

Convicted.....	40
Acquitted.....	1
Total.....	41
Fiscal year, 1913.....	28

Trials of enlisted men.

	Navy.	Marine Corps.	Total.
Convicted.....	1,320	365	1,685
Acquitted.....	22	6	28
Total.....	1,342	371	1,713
Fiscal year, 1913.....	1,295	372	1,667

Schedule of principal offenses.

	Navy.	Marine Corps.	Total.
OFFICERS.			
Absence over leave.....	1		1
Absence over leave, neglect of duty.....	1		1
Absence over leave, disobeying the lawful order of his superior officer, falsehood, scandalous conduct tending to the destruction of good morals.....	1		1
Absence over leave, embezzlement, violation of a lawful regulation issued by the Secretary of the Navy.....	1		1
Assault with intent to commit rape, indecent assault, scandalous conduct tending to the destruction of good morals.....	1		1
Conduct unbecoming an officer and a gentleman.....	1	1	2
Conduct unbecoming an officer and a gentleman, scandalous conduct tending to the destruction of good morals.....	1		1
Culpable inefficiency in the performance of duty.....	1		1
Culpable inefficiency in the performance of duty, neglect of duty.....	2		2
Disrespect to superior officer.....	1		1
Drunkenness.....	2		2
Drunkenness on duty.....	2		2
Drunkenness, conduct unbecoming an officer and a gentleman.....	1	1	2
Drunkenness on duty, conduct to the prejudice of good order and discipline, violation of a lawful order issued by the Secretary of the Navy.....	1		1
Drunkenness, conduct to the prejudice of good order and discipline.....	1		1
Drunkenness on duty, conduct to the prejudice of good order and discipline.....	1	1	2
Drunkenness and neglect of duty.....	1		1
Drunkenness, conduct to the prejudice of good order and discipline, scandalous conduct tending to the destruction of good morals.....	1		1
Drunkenness, scandalous conduct tending to the destruction of good morals.....	1	2	3
Drunkenness, using abusive language toward another person in the Navy.....	1		1
Embezzlement, violation of a lawful order issued by the Secretary of the Navy.....	1		1
Falsehood, conduct unbecoming an officer and a gentleman, conduct to the prejudice of good order and discipline, scandalous conduct tending to the destruction of good morals.....	1		1
Falsehood, conduct unbecoming an officer and a gentleman, scandalous conduct tending to the destruction of good morals.....	1		1
Improperly hazarding a vessel of the Navy, and through inattention and negligence allowing her to run upon a shoal.....	2		2
Neglect of duty.....	1		1
Neglect of duty, conduct to the prejudice of good order and discipline.....	1		1
Scandalous conduct tending to the destruction of good morals.....	4		4
Using abusive language to superior officer.....	1		1
Violation of a lawful regulation issued by the Secretary of the Navy, neglect of duty.....	1		1
Total.....	35	5	40
Acquitted.....	1		1
Total.....	36	5	41
ENLISTED MEN.			
Absence over leave.....	94	33	127
Absence without or over leave and fraudulent enlistment.....	2		2
Absence without or over leave, conduct to the prejudice of good order and discipline, scandalous conduct tending to the destruction of good morals.....	39	16	55
Assaulting and striking another person in the Navy.....	3	1	4
Assaulting and striking superior officer, or threatening to assault and strike superior officer.....	8	1	9
Assaulting with a deadly weapon another person in the Navy.....	5		5

Schedule of principal offenses—Continued.

	Navy.	Marine Corps.	Total.
ENLISTED MEN—continued.			
Breaking arrest.....		1	1
Conduct to the prejudice of good order and discipline.....	57	21	78
Culpable inefficiency in the performance of duty.....	2		2
Desertion and breaking arrest.....	1	3	4
Desertion.....	750	137	887
Desertion and fraudulent enlistment.....	63	19	82
Desertion, conduct to the prejudice of good order and discipline, or scandalous conduct tending to the destruction of good morals.....	29	22	51
Disobeying a lawful order of his superior officer.....	5	1	6
Disrespectful in language and deportment to superior officer while in the execution of his office.....	3		3
Drunkenness.....	2	1	3
Drunkenness on duty, post, or guard.....	9	15	24
Drunkenness, conduct to the prejudice of good order and discipline, or scandalous conduct tending to the destruction of good morals.....	15	10	25
Embezzlement.....	2	1	3
False swearing or perjury.....	5		5
Fraudulent enlistment.....	122	23	145
Leaving station or post before being regularly relieved.....		4	4
Maltreating an inhabitant.....	1	1	2
Manslaughter.....		1	1
Murder.....		1	1
Neglect of duty.....		4	4
Refusing to obey a lawful order of his superior officer.....	13	2	15
Resisting arrest.....	1	1	2
Scandalous conduct tending to the destruction of good morals.....	29	11	40
Sleeping on watch or post.....	3	9	12
Sodomy.....	7	4	11
Robbery.....	1	1	2
Theft.....	29	10	39
Theft, scandalous conduct tending to the destruction of good morals, or conduct to the prejudice of good order and discipline.....	8	6	14
Using abusive, obscene, or threatening language toward another person in the service.....	4	1	5
Violation of article 14, Articles for the Government of the Navy.....	8	4	12
Total.....	1,320	365	1,685
Acquitted.....	22	6	28
Total.....	1,342	371	1,713

SUMMARY COURTS-MARTIAL.

	Navy.	Marine Corps.	Total.	Corresponding total, 1913.
Records received and revised.....	7,542	2,079	9,621	12,433
Cases disapproved.....	131	33	164	133
Acquitted.....	183	29	212	209
Bad-conduct discharges.....	1,278	364	1,642	1,946
Average trials per month.....	629	173	802	1,036

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PRISON REPORTS.

The annual reports from the naval prisons and disciplinary barracks show them to be in an efficient and satisfactory condition. The naval prison at Boston was closed on April 25, 1914, owing to the necessity for the transfer to expeditionary duty of the officers and enlisted men of the Marine Corps employed as guards for prisoners. The prisoners confined in the naval prison, Boston, were transferred to the naval prison, Portsmouth, N. H., on the date of closing of the Boston prison.

The following excerpts from the annual reports of naval prisons and disciplinary barracks are deemed worthy of publication:

From the report of the commanding officer, disciplinary barracks, Port Royal, S. C.:

The discipline in the detention barracks has been very good, but has suffered from frequent changes and shortage of officers, noncommissioned officers, and guards.

During the first 10 months of the past fiscal year the scope of drills was extended, and much care was exercised in properly training all detentioners. The detentioners in all the various rates were drilled for at least one month before assignment to special details for such work as would be required of their rates on board ship. Detentioners are also required to perform a certain amount of guard duty within the stockade. The result has been most satisfactory, as has been shown by the trim, soldierly, and well set up appearance of the battalion of detentioners attested during all inspections.

During the first part of the year schools were inaugurated for the instruction of radio operators, electricians, machinists, yeomen, bakers, and cooks. The men under instruction were all transferred, but new classes have been started for radio operators and as far as possible men of all ratings receive a certain amount of instruction from practical work of the class for which they are best qualified to succeed. There have been transferred from here 15 men who have qualified as radio operators at this station, and unofficial reports of their progress in the service at large have been excellent. The class hours are 8 a. m. to 11.30 a. m. and 1 p. m. to 4.30 p. m., with lectures from 7 p. m. to 8.15 p. m.

It is not believed that all detentioners who serve their period in detention, even with conduct excellent, should be restored to duty. These men are under constant observation, during which the character of the man is carefully noted, and there are a few instances where lack of efficiency and mental incapacity have been pronounced. It is recommended that in such cases the commanding officer of the disciplinary barracks be authorized to discharge these men from the service upon expiration of two-thirds of their sentence.

In each company in the detention barracks there are detailed from its members acting petty officers, who are given as much authority and responsibility as possible. There are also a number of excellent men in the detention barracks who are detailed as mechanics and clerks.

From the medical officer's report:

The health of the detentioners has been excellent, as will be seen from the percentage of sick. During the year 17 cases were transferred to the hospital. Only cases of a severe nature or those requiring special treatment are sent to the hospital on account of inadequate means of guarding them while there. While under treatment at the sick bay the duty men and probationers are separated from the detentioners.

In the annual report of the disciplinary barracks, Puget Sound, are found the following statements:

From the commanding officer's report:

From April 27, 1914, until the end of the fiscal year the disciplinary barracks has been temporarily located on board the *Philadelphia*, under the command of the commanding officer of the receiving ship at Puget Sound.

After a few days, necessary to develop a suitable reorganization for the detentioners and probationers quartered on board ship, the regular routine of the disciplinary barracks, modified as necessary to suit the changed conditions under which the men were quartered, was resumed. Owing to the transfer of nearly all of the regular crew of the *Philadelphia* for service in Mexican waters, detentioners have been employed for the routine work of upkeep and cleaning on board the *Philadelphia*. In view of the facilities for carrying them on, boat drills and battery drills have been added to the routine.

Owing to the depletion of the marine detachment of the *Philadelphia*, it has been necessary to assign several petty officers for duty in connection with the drill and instruction of detentioners. With this exception no difficulties have been experienced, and it is believed that the general principles of the detention system have been as well and as satisfactorily carried out on board the *Philadelphia* as they could be in a barracks. On the *Philadelphia* the prisoners and detentioners do not come in contact with one another, being quartered in separate compartments, and, in fact, one class of men might be unaware of the others' presence on board except as they meet in their way to or from their work or drills. With the exception of the fact that the *Philadelphia* is a prison ship, and that in general it is well to make as broad a distinction as possible between prisoners and detentioners, it is believed that this ship is better suited for carrying out the general idea of the detention system for naval detentioners than are

shore barracks. A large proportion of the men at the disciplinary barracks are deserters—70 per cent of the whole. Many of these deserted because of their dissatisfaction with life on board ship, and all it involves. Since one of the avowed objects of the detention system is, by giving these men "another chance," to endeavor to reconcile them to the necessary disciplinary restrictions of a naval life, thereby making them of future value to the service, it seems that a better way to accomplish this object is by having them quartered on board ship, where their environment and mode of life more nearly resemble that in active service, than in barracks. At the barracks they sleep in beds, live in houses, are organized, drilled, and in every way treated more like soldiers than sailors. They do not even see the waters of the harbor. On board the *Philadelphia* they are berthed, messed, organized, and in general handled as they would be on a ship in commission. Boat drills, which they could not get at the barracks, have been added to their routine, as well as battery drills on board the receivingship (*Charleston*). In short, every effort is being made to make their daily life, instruction, drills, and routine, resemble as closely as possible what these would be on board a ship in full commission, while at the same time maintaining the strictest discipline. The foregoing remarks do not, of course, apply to Marine detentioners, for whom the barracks system would seem to be better adapted.

From the medical officer's report:

The sanitary inspection is made weekly, and the ship has always been found clean and in excellent condition.

A large space of ground near the receiving ship building has been inclosed with a stockade and is used by prisoners and detentioners for recreation on Saturday afternoon and Sunday. This was proposed and built by the commanding officer with the idea of giving the prisoners something to occupy their time between Saturday noon and Monday. The result is excellent.

The commandant of the navy yard, Puget Sound, in an indorsement to the Department, says:

So far as may be observed the disciplinary barracks have been very successfully administered by the commanding officer of the receiving ship, and in my opinion naval detentioners can be better trained on board the *Philadelphia* than at the barracks and without duplication of plant and consequent expense.

From the report of the commanding officer, naval prison, Mare Island, Cal.:

The sanitary condition of the prison is excellent, and there are no recommendations to be made under this heading.

The classes in geography, history, spelling, high school and grammar school arithmetic are maintained under the direct supervision of a head teacher (a prisoner) and as many teachers from among the prisoners as may be necessary to conduct the classes. This school is held three times a week. Seamanship classes are held twice a week for instruction in knotting, splicing, weaving, and sennit work.

For amusements the prisoners are forced to depend upon checkerboards, books, and magazines, it not being possible to supply any outdoor amusements, as the prisoners are confined indoors all the time, but as the men receive so much work in the open air, and the prison is so well ventilated, it is not considered necessary that the prisoners be sent out for recreation. The prisoners are organized in such a manner as to facilitate the proper management and care of the prison, and details are so changed from time to time that all prisoners get an opportunity to work outside.

The report of the chaplain states:

The chaplain has conducted divine service in the prison on every Sunday afternoon about 1 o'clock, the service lasting for 45 or 50 minutes.

The report of the warden of the naval prison, U. S. S. *Philadelphia*, states:

The general court-martial prisoners confined aboard have been employed, except Sundays and holidays, at labor in the yard, at such work as the commandant directed, to wit: Printing office, repairing roads, cutting grass, constructing drains, building gutters, sifting gravel, barbering, tailoring, shoe repairing, clerking, gardening, and messmen.

When prisoners are not employed outside they are confined on board, for safe-keeping, in the berth deck compartment. Those whose duty requires that they be kept

aboard are confined within a large cell compartment on the top gallant forecandle, and required to work one day a week outside, and the messmen are changed every 30 days. During inclement weather prisoners are employed in making deck swabs, hand swabs, and fenders, etc., on board this vessel.

Considering the class of men confined, their conduct has been very good. There has been but one summary court-martial awarded.

The rations have been well chosen, well cooked, and properly served, at all times.

There is no chaplain attached to this ship, but the local Young Men's Christian Association naval branch conducts the usual services.

The report of the medical officer of the naval prison on the U. S. S. *Philadelphia* states:

The general sanitary condition of the prison ship *Philadelphia* has been excellent. She is clean, well ventilated, and has been remarkably free from contagious and infectious diseases.

The food has been excellent; no complaints have been registered and no cases of food poisoning have appeared.

The sanitary inspection is made weekly, and the ship has always been found in excellent condition.

The report of the commanding officer, naval prison, Portsmouth, N. H., states:

As in the previous year, the marine guard has been depleted in numbers by reason of expeditionary forces, which renders insufficient guards to keep all prisoners employed every working day. When practicable all prisoners are worked outside from 7 to 11.30 a. m. and from 12.40 to 4.30 p. m., and the inside details for the kitchen, bakery, laundry, etc., employed at such hours as the nature of their employment requires. Prisoners regularly detailed for inside work are sent outside on certain half days weekly for benefit of their physical condition. Efforts have been made to concentrate jobs so that the maximum number of prisoners are employed.

The prison school has advanced in rapid strides in the past year. A more comprehensive and thorough course of study has been set out for the pupils. The school is first divided into two main classes which attend on alternate nights, the intervening night being reserved for studying the lessons assigned the previous night. Each main division is subdivided into six classes, with studies so graded in each as to provide a gradual advancement from the lowest or sixth grade to the first grade, consisting of the most advanced pupils and where algebra, commercial arithmetic, United States and general history, and higher mathematics are taught. When a new man enters the school, he is carefully examined by the overseer as to the extent of his previous schooling and apparent ability and assigned to the class for which he seems fitted. Upon mastering the lessons of the class first assigned to, the pupil is advanced to the next higher, and so on. This system of promotion affords an incentive to the pupil to work and provides for every grade of ability or energy. The instructors are prisoners detailed for the work under the supervision of the inside overseer and the officer of the day. The great improvement in conditions in the school has been further advanced by the energy of the inside overseer coupled with the intelligent cooperation of the prisoner instructors.

The prison library has been greatly increased during the past year, and at present embraces about 6,500 volumes. Each prisoner is visited by the prison librarian as often as possible for the purpose of distributing books. In this manner each prisoner is enabled to secure a maximum of good clean reading matter.

On the first and third Sundays of each month prisoners are permitted to receive visitors on the first floor of the administration building, out of sight of the other prisoners and the cell block. Church services are held at 11.30 a. m. each Sunday, Catholic and Protestant services alternating. Christian Science services are held every Sunday at 2.30 p. m. Sunday evenings are devoted to moving pictures for first class men.

Discipline among prisoners is good; 250 men are first class compared with 219 last year. Only 4 men are in the special red dress [lowest conduct class] as compared with 18 last year.

The report of the medical officer, naval prison, Portsmouth, N. H., states:

Ventilation.—The cell block is ideal in every particular, and although in winter the temperature frequently went below 60° F., the standard set, the physical welfare of the inmates was well maintained, as is attested by the fact that there has not been a case of pneumonia originating in this prison in over two years, and the number of

nose, throat, and lung infections have been unusually few. Not so much can be said for the main building. The guard room occupies the whole fourth floor and with windows on all sides the ventilation is excellent. On the third and second floors storerooms, offices, dispensary, etc., have been constructed on the window sides, leaving a large open space in the center of the floor, which, although poorly lighted, enjoys a fair ventilation.

Comparing the average ration with Voit's Standard Dietary, it averages much higher in all of the food principles and exceeds it in calorific value by 840 grams.

The nutritive ratio of a well-balanced ration should be 1 : 5.5, not varying below 1 : 5 or above 1 : 7. This ratio between the proteids and carbohydrates in the prison ration is 1 : 5.2, and quite close to the ideal.

The amount of food needed by a man performing light work in terms of fuel value is 2,600 calories, 3,500 are required by a man performing hard work, and 3,800 for very hard work. The average of 3,860 calories present in the prison ration provides for work of the hardest type. It is believed by the medical officer that the food is sufficient in quantity and quality to maintain a proper metabolic balance.

Personnel.—The general health of the prisoners is excellent. I have never seen a more robust lot and comparative statistics at admission and discharge bear out the fact that this good condition is due to prison routine. There was instituted July 1, 1913, by the commanding officer a uniform system of physical examination to be made at the beginning and end of imprisonment. This system makes easy the discovery of transmissible diseases, provides sufficient data for the determination of the physical welfare of the prisoner and testifies as to the effect of prison routine upon the health of the inmates. It gives the medical officer an opportunity of learning the exact physical condition and past and present history of the prisoner. This record is a guide to his subsequent treatment and is an aid in determining the kind of labor he is physically able to perform.

The commanding officer of the naval prison on the U. S. S. *Southery* states:

School is held every night except Saturdays, Sundays, and holidays, at which there is always a good attendance.

The establishing of disciplinary ships here would be a great saving in the transportation of general court-martial prisoners from the northern naval districts, and the return of men here, which frequently happens, of those that do not make good at Port Royal.

There were no offenses committed by general court-martial prisoners during the fiscal year that warranted trial by deck court, summary or general court-martial.

The report of the medical officer of the naval prison on the U. S. S. *Southery* states:

The general sanitary condition of the *Topeka* and *Southery* has been excellent. Living spaces, water-closets, holds, and storerooms have been maintained in a scrupulously clean condition, and the ventilation of these compartments is satisfactory.

The clothing issued to prisoners is well adapted to this climate. There have been very few cases of "colds," bronchitis, tonsillitis, etc.

DEFECTIVES.

Laboratory experiments have proved conclusively that a large percentage of prisoners are "defectives." This does not mean that they are not legally responsible for their actions, but that they are subnormal in intelligence. Even large commercial firms are now in some instances safeguarding themselves against the employment of men of this class, one of whose proven characteristics is their inability to hold any position permanently. Naturally the Navy receives more than its share of these men. The Bureau of Medicine and Surgery is now engaged in the development of a mentality test practicable for application in recruiting, and when developed it is considered that it should be regarded fully as important a portion of the examination as the physical. The enlistment of these defectives is a positive detriment to the service. They rarely complete an enlistment, and, even

when they do, are a constant drag on the ship on which they are serving. As above stated, they form a large percentage of the prison population.

CLEMENCY LETTERS.

An important item in the work of this office is the correspondence relating to clemency for prisoners. Incidentally these letters show that an important factor leading to desertion is family relations, many men feeling fully justified in violating their oath on account of family affairs. It is thought that careful instruction of the men will alleviate this condition. Many of the letters are of course written merely from the fullness of heart of a mother, wife, or sweetheart when the prisoner is as undeserving of their tears as he is of official clemency. Through the courtesy of the mayor, charitable organizations, and in some cases in small towns the postmaster, the cases are investigated before any action is taken. These investigations show a large number of the cases are undeserving.

GENERAL FEATURES OF PRISON SYSTEM.

As the general policy and procedure of the department in regard to the imprisonment of offenders and their rehabilitation and restoration to duty is not believed to be fully understood, it is thought the following brief synopsis of the general system of administration of justice in operation during the past year may be of value:

The men undergoing confinement may be divided into three general classes:

(1) *Criminals*.—Those guilty of acts of moral turpitude which would be punished by a term in State prison if the offender were a civilian. These prisoners are confined in State prisons, arrangements having been made with the State authorities of New Hampshire, Connecticut, Pennsylvania, and California to receive them under certain conditions. These men upon the approval of the adjudged sentence are sent to a naval prison for further transfer to the designated State prison.

(2) *Inmates of naval prisons*.—These are men who are convicted of strictly military offenses. Boys less than 21, men recommended to clemency, and those whose offenses seemed to be more a question of ignorance than of deliberate intent are sent to disciplinary barracks, as noted in next paragraph. During the year naval prisons have been maintained at Portsmouth, N. H., Boston, Norfolk, Mare Island, Cavite, and on the U. S. S. *Philadelphia*, moored at the naval station, Puget Sound, and on the U. S. S. *Southery*, navy yard, Portsmouth, N. H. The prison at Boston was closed on April 24, 1914, the prisoners being transferred to Portsmouth, N. H. The men confined in these prisons wear prison garb and perform hard labor. Men sent to a naval prison may, in accordance with prison regulations, be recommended for transfer to a disciplinary barracks after serving six months of their sentences with good conduct, and, if their past service records seem to warrant the belief that they are desirable for eventual restoration to duty, and sufficient time remains in their current enlistments, they are sent to a disciplinary barracks with a view to permitting them, by their own good conduct, to earn their restoration to duty and avoid the stigma of a dishonorable discharge.

(3) *Detentioners*.—These are the men confined at a disciplinary barracks. As above stated, they consist of two general classes, viz:

(a) Those committed direct to the barracks: These are the very young men, those with less serious offenses and whose term of enlistment permits them to serve through their sentences with sufficient time to justify their restoration to duty if conduct warrants it.

(b) Those who are first committed to a naval prison, but whose conduct and past record warrant the belief that they may be deserving of another chance, and who are accordingly transferred to a disciplinary barracks, as explained above.

Detentioners wear the regular naval uniform, and instead of being required to perform hard labor are given a thorough course of drills and instruction with a view to better fitting them for the duties of their ratings should they earn their restoration to duty. Men whose conduct is satisfactory are kept in strict detention until they have completed two-thirds of their adjudged terms and are then placed on probation at the disciplinary barracks for the remaining third of their terms. In this status they receive pay, liberty, etc., and are in all respects in the same status as enlisted men in good standing in the service at large, except that if, during the probationary period, they commit a serious infraction of the regulations they may be returned to hard labor or to strict detention and be required to serve out the remainder of their sentence or a part thereof. There are two disciplinary barracks, one located at Port Royal, S. C., the other at the naval station, Puget Sound, Wash. On April 25, 1914, owing to the necessity of service in Mexico, the barracks at Puget Sound was closed, and the men in detention were transferred to the U. S. S. *Philadelphia*, where the detention system has since been maintained. The above system is based on modern ideas of penology and places it within the reach of all whose term of enlistment permits to earn a remission of the dishonorable discharge and a rehabilitation in the service by their own good conduct.

RESULTS OBTAINED FROM DETENTION SYSTEM.

In order to ascertain what actual results were being obtained from the system, soon after my appointment I traced the subsequent history of every man who had passed through the disciplinary barracks between January 1, 1912, and November 1, 1913.

During this period there were approximately 2,900 total sentences of general courts-martial approved. Of these about 150 were confined for criminal offenses, being sent to State prisons, leaving 2,750 guilty of naval offenses. Of these, 665 underwent confinement in the disciplinary barracks.

Of these 665, 160, or about 25 per cent, were dishonorably discharged pursuant to sentence, not having "made good;" 84 men were dishonorably discharged, but recommended for reenlistment; and 421 were unconditionally restored to duty. Of these 421, 221, or about 50 per cent, were either still in the service in good standing or had received either an honorable discharge or ordinary discharge up to November 1, 1913; as this was for a period of 22 months the 50 per cent represented the loss during a mean period of 11 months following restoration.

It is entirely natural that the percentage of men who after restoration to duty have a creditable record for 11 months will be materially less than after a mean interval of 6 months. In fact the data for a period of one year prior to November 1, 1913 (corresponding to a mean interval of six months), showed that 68 per cent of those restored had "made good."

It is believed that as the service is becoming more familiar with the detention system the products thereof are looked upon with less suspicion and that the percentage which "make good" will be considerably greater than above shown. However, it is believed that the data for the year from July 1, 1913, to June 30, 1914, is misleading because of the fact that about 500 men were restored to the service either on probation or unconditionally about April 26; not only was the large proportion under test only two months and four days, but also they were immediately sent to Mexican waters where little opportunity was afforded for misbehavior.

The following is the summary of the results obtained from those restored to duty from Port Royal between July 1, 1913, and June 30, 1914:

Of the 694 men unconditionally restored to duty and restored to duty on probation from Port Royal 609 are still serving in an honorable status (of whom 14 have reenlisted); 3 have been discharged with honorable discharges; 12 with ordinary discharges; 26 with bad-conduct discharges pursuant to sentence of summary courts-martial; 3 have died; 4 have been dishonorably discharged; 5 have been discharged as undesirable (due to inaptitude or physical disability); 9 have been returned to hard labor for offenses committed while in the disciplinary barracks; and 23 have deserted. Thus it will be seen that of the 694 men restored to duty 624, or about 89.6 per cent, may be considered as having "made good" up to the date of the end of the period covered by this report. Owing to the large number restored to duty on April 26, this represents a mean period of about four months.

The Puget Sound annual report for the fiscal year 1914 shows that 360 men (including one detentioner recaptured) have been handled during the fiscal year. Of this number 157 have been restored to duty unconditionally; 41 were discharged; 32 returned to confinement at hard labor for offenses committed while in the disciplinary barracks; 17 deserted; 1 died; and 112 were in detention on June 30, 1914. Of the 157 men unconditionally restored to duty in the service at large 118 are still serving in an honorable status; 10 have been discharged with an ordinary discharge; 13 have been discharged with a bad-conduct discharge pursuant to the sentence of summary courts-martial; 2 have died; 10 have deserted; and 4 have been discharged as undesirable (cases of inaptitude or physical disability). Thus it will be seen that of the 157 men returned to duty in the service at large 130, or about 83 per cent, may be considered as having "made good" up to the date of the end of the period covered by this report.

From the above it seems fair to conclude that 60 per cent of the men restored to duty will, at the end of one year from the date of restoration, be in the service in good standing or will have received an honorable or an ordinary discharge on expiration of enlistment.

From a financial viewpoint the system is expensive. As a humanitarian system it is excellent, in that it requires a recalcitrant to work for his rehabilitation, and on discharge he is a better and more useful man than when he entered the service, and by virtue of having accomplished his own redemption he is a stronger and more capable self-reliant man.

The results justify the continuance of the system, but at the same time point out the necessity of economy. The plan for a great reduction in expense of this item will be suggested below.

An examination of the total shows that of the various offenses charged against naval prisoners 80 per cent involve desertion or absence over leave, either alone or together with other offenses. About 15 per cent involve, among other offenses, that of fraudulent enlistment. Besides this it has been found that about the same proportion of minor courts and minor punishments involve unauthorized absence. It is believed that deliberate overstaying of leave has the most pernicious effect upon naval discipline; also the punishments habitually administered do not seem to reduce it. Imprisonment is undesirable for many reasons, and loss of all pay for prolonged periods is liable to lead to other offenses even more serious in nature. For these reasons General Order 110 has been approved by you, which will, it is believed, greatly promote the discipline of the service. In general, this order substitutes loss of half pay and bad conduct discharge at discretion of commanding officer for many of the cases of absence over leave which now involve imprisonment. With this order in operation, and if the regulations be made more liberal in so far as the offer of reward for deserters is concerned (as to which I have heretofore submitted a separate recommendation), so that men will feel assured of being captured and imprisoned if they continue in desertion, and that they will be either placed on half pay or be discharged if they return voluntarily, it is believed desertion and absence over leave will be greatly reduced, discipline will be better, and the attitude that we do not want men in the service who can not obey will improve the morale of the service. This scheme should greatly decrease the number of prisoners without, it is believed, increasing our total loss of men to the service.

REDUCTION OF PRISONS RECOMMENDED.

When this order shall have become operative throughout the service, one naval prison on each coast should be sufficient. It is recommended that Portsmouth and Mare Island be the two prisons. Since the disciplinary barracks at Puget Sound was shifted from ashore to the U. S. S. *Philadelphia*, it has been strongly represented by officers attached thereto and familiar with both systems that ships are more suitable for that purpose than barracks ashore. It is, of course, the object to restore to the service all men who are sent to the disciplinary barracks—no man is ordinarily sent there unless he gives promise of being desirable for retention. Therefore instructions in ship life are desirable. For that reason the U. S. S. *Philadelphia* should be made the permanent quarters of the detentioners on the west coast. Under the proposed scheme the number of men sent directly to detention will be greatly reduced; the detentioners will be, generally speaking, those men who, having shown aptitude and

reform in prison, have had their sentences mitigated to detention. Sending these men long distances under guard involves considerable expense, and returning them to prison when they show themselves unworthy involves more. Therefore the U. S. S. *Philadelphia* should be taken to Mare Island, where these transfers could be effected without expense.

For the same reason it is proposed to use the *Topeka* at the navy yard, Portsmouth, for the east coast detentioners. With this system there will be a prison at one navy yard on each coast, with a detention ship at the same yard.

Under the provisions of General Order 110 there will be the following classes of men sentenced to imprisonment:

1. Criminals: To State prisons, as at present.
2. Fraudulent enlisters: Undesirable by their records.
3. Deserters: Who are apprehended and delivered.
4. Deserters or stragglers: Who surrender, but who have less than 12 months to serve on current enlistment.
5. Serious military offenders.

Of these, classes 1 and 2 are manifestly undesirable for the service and will not become available for the detention system.

Class 3 will furnish but few detentioners, as they are probably not desirous of remaining in the service. However, some will be less than 22 years old and will be sent to the detention ship direct.

Class 4, owing to the expiration of their enlistment in the majority of cases before term of confinement expires, will furnish few men to the detention ship.

Class 5 are of all ages, and these men are frequently desirable for retention. A considerable number of these men would probably be desirable for assignment to detention.

It is further recommended that, having established the prisons at Portsmouth and Mare Island, with a detention ship at each of these places, the following instructions be promulgated to render the rehabilitation of deserving naval prisoners general in scope and automatic in operation:

(1) Criminals: To be sent to State prisons, as at present, retaining naval prisons exclusively for military offenders.

(2) Military offenders: Those less than 22 years of age to be sent to detention ships direct unless expiration of term of enlistment or past record renders them undesirable for retention in the service, in which case they will be sent to naval prisons. Those 22 years of age and above to be sent to naval prisons.

(3) The undesirables: Will be required to serve their sentences at hard labor, subject to existing prison rules, and discharged from the naval prison at the expiration of their sentences in accordance with the terms thereof.

(4) Desirables: Those sent to naval prisons whose expiration of term of enlistment does not forbid or whose record does not render them manifestly undesirable for retention, to undergo one-third of their approved sentences in the naval prison; then, if conduct warrants, to be transferred on recommendation of the commanding officer of the naval prison, approved by the department, to the detention ship.

(5) Second-class detentioners: Those sent to the disciplinary ships, whether direct or from the prison, will, upon arrival, be clothed in

the regulation uniform and will be regarded and treated as detentioners now are and will be known as "second-class detentioners" until one-half of their adjudged term of confinement (or a greater period of time if considered desirable by the commanding officer of the detention ship) has been served.

(6) First-class detentioners: After men have served one-half of their adjudged sentences they will, at the discretion of the commanding officer of the detention ship, be advanced to first class. This class will correspond to the present "detentioners on probation" and will be known as "first-class detentioners." As such they will receive the full pay of their rating and will be allowed all benefits and privileges of men in the regular service.

(7) After a man has completed two-thirds of his sentence with an excellent record, he will be either discharged, pursuant to his sentence, or will be unconditionally restored to duty in the service at large, as the circumstances, including physical condition and professional attainments, warrant.

(8) No prisoner will be transferred from a naval prison to a detention ship, nor from the status of second-class detentioner to first-class detentioner (probationer), unless, in the opinion of his commanding officer, he gives promise of being desirable for restoration to the service both physically and professionally, and unless he personally desires this opportunity to effect his rehabilitation.

(9) Any man in the detention ship may, at the discretion of the commanding officer, be returned to hard labor if conduct or aptitude is such as to warrant the belief that he will not prove desirable, whether he was sent to detention direct or from a naval prison. Any first-class detentioner may be reduced to second class at the discretion of the commanding officer of the detention ship for bad conduct or inaptitude. In case a man is returned from detention to hard labor, the term served as first-class detentioner will be considered a portion of the one-third allowance for good conduct, the two-thirds sentence being additional thereto; but time served as second-class detentioner will count in all respects as if it had been at hard labor.

It is believed that the above consolidation of prisons and detention systems will prove superior in many ways. It will render the entire system automatic, providing a means for all desirables to effect their own rehabilitation, whether sent to prison or to detention direct, and by closing the present disciplinary barracks will, while improving the training, effect a saving of at least \$500,000 annually.

RECOMMENDATIONS.

In addition to the above radical changes, it is recommended:

(1) That each prison and detention ship have a regularly assigned and specially selected chaplain.

(2) That prisoners be utilized to perform more useful labor in the future than in the past.

(3) That those men who have had their pay remitted, due to the destitution of their families, be required to do eight hours of remunerative Government work per day.

(4) Though interested parties at times take steps to prevent the utilization of prison labor for remunerative purposes, it must be

remembered that naval prisoners are regularly enlisted men undergoing punishment. It is therefore recommended that they be freely used to perform any appropriate labor performed by enlisted men at a navy yard, such as coaling ships, chipping bottoms, handling lines or stores, or any duty for which a ship's working party would normally be used.

II.

OFFICERS' RECORDS.

Under this heading may be grouped the convening and dissolving of examining boards for admission, promotion, and retirement, and the review and filing of all records relating to same. There follows a tabular list of the operations of this office in these particulars during the year:

EXAMINING BOARDS.

Officers of the Navy:	
Records revised.....	251
Failed professionally.....	3
Failed professionally and morally.....	1
Failed physically.....	18
Action on cases suspended.....	10
Disapproved.....	3
Action on suspended cases taken.....	7
Qualified for promotion.....	216
Officers of the Marine Corps:	
Records revised.....	13
Failed professionally.....	1
Failed physically.....	1
Qualified for promotion.....	11

RETIRING BOARDS.

Officers of the Navy.....	55
Officers of the Marine Corps.....	5
Total.....	60

EXAMINING BOARDS OF CANDIDATES FOR ADMISSION TO THE NAVY AND MARINE CORPS AS OFFICERS.

Line:	
Examined.....	6
Failed professionally.....	1
Passed and appointed.....	5
Medical Corps:	
Examined.....	42
Failed professionally.....	10
Failed physically.....	1
Action indefinitely postponed.....	1
Passed and appointed.....	30
Medical Reserve Corps:	
Examined.....	140
Failed professionally.....	21
Failed physically.....	36
Withdrawn.....	12
Passed and appointed.....	71
Dental Corps:	
Examined.....	8
Failed professionally.....	1
Failed physically.....	2
Passed and appointed.....	5
Dental Reserve Corps:	
Examined.....	13
Failed professionally.....	3
Failed physically.....	1
Withdrawn.....	1
Passed and appointed.....	8
Pay Corps:	
Examined.....	62
Failed professionally and physically.....	13
Failed professionally.....	38
Failed physically.....	3
Failed professionally and morally.....	1
Passed and appointed.....	7
Chaplains:	
Examined.....	1
Passed and appointed.....	1

Professors of Mathematics:	
Examined.....	6
Failed physically.....	4
Passed and appointed.....	2
Marine Corps:	
Examined.....	65
Passed and appointed.....	21

RECORDS REVISED.

Examinations for promotion, Navy and Marine Corps.....	264
Examinations for retirement, Navy and Marine Corps.....	60
Examinations for admission, Navy and Marine Corps.....	343
Grand total.....	667

PHYSICAL DEFECTS OF WARRANT OFFICERS.

In connection with the examinations which have been held, I desire to invite your attention to the very large percentage of warrant officers who either fail physically when they come up for promotion to commissioned warrant officers after six years' service as warrant officers, or who break down physically and are ordered before retiring boards prior to having finished six years of service in the warrant grades.

Owing to the abnormal proportion found incapacitated, this subject merits attention. These officers are, without exception, of an age where they should be physically in the prime of life and their life has not been appreciably harder than that of commissioned officers. The hypothesis therefore suggests itself as reasonable that the cause lies in the fact that their physical examinations for appointment as warrant officers are not as strict as those for promotion to commissioned warrant officers.

The examinations for appointment as warrant officers do not fall under the cognizance of this office, but, owing to this large percentage of failure and the consequent burden to the retired list, attention is invited to the necessity of a very thorough physical examination prior to appointment as warrant officers. In this connection, it was noted that of 62 candidates amongst the enlisted personnel of the Navy who took the examination for appointment as assistant paymaster, 15, or 24.2 per cent, failed physically. As these were all from the enlisted personnel of the Navy, and were young men (less than 26 years of age), this is an indication that the physical standard for enlisted men is not up to that for officers. Consequently, when a petty officer is advanced to warrant rank, he should, in view of his privilege of retirement, be subjected to an examination in all respects as rigorous as when he comes up for appointment to commissioned rank, because, if he fails on the latter examination, on account of physical disability in line of duty, he must nevertheless be retired with commissioned rank.

The following figures show the abnormal proportion of physical failures of warrant officers coming up for promotion to the grades of chief:

Percentage who failed physically.....	38.7
Percentage who were retired.....	30.8

The following figures give the same data for all commissioned officers of the Navy examined for promotion during the same period:

Percentage who failed physically.....	5.63
Percentage who were retired.....	3.03

WAIVING PHYSICAL DEFECTS.

I also desire to invite attention to the frequency with which physical defects, which are waived when an officer first receives a commission or warrant, on account of not then being serious, later develop and result in early retirement. These defects relate not only to eyesight and hearing, but not infrequently to organic troubles barely apparent on appointment, and develop rapidly causing retirement in line of duty after only a few years service. It is recommended that physical defects on entrance to the list of officers in no case be waived. An ample number of physically sound applicants are available for all positions, and waived defects too frequently cause retirement comparatively early in life.

* * * * * *

RIDLEY McLEAN.

REPORT OF THE CHIEF OF BUREAU OF YARDS AND DOCKS.

DEPARTMENT OF THE NAVY,
BUREAU OF YARDS AND DOCKS,
Washington, D. C., October 1, 1914.

To: Secretary of the Navy.

Subject: Report of operations of the Bureau of Yards and Docks for the fiscal year 1914.

The cost of the work performed during the fiscal year 1914 from appropriations under the cognizance of the bureau aggregated \$5,529,167.25, divided as follows: Public works, \$3,173,721.64; maintenance of yards and stations, \$1,525,808.36; repairs and preservation at navy yards and stations, \$801,873.45; contingent, \$27,763.80.

The expenditures of funds under the cognizance of other bureaus and the Marine Corps, but supervised by this bureau, were as follows: "Depots for coal," \$524,540.75; "Coal and transportation," \$228,366.23; "Equipment of vessels," \$126,471.98; Bureau of Medicine and Surgery, \$132,814.84; Bureau of Navigation, \$15,338.56; Marine Corps, \$11,594.45. Under appropriation "High-power radio stations" the expenditures amounted to \$80,522.59.

The total cost of the work performed during the fiscal year under the supervision of the Bureau of Yards and Docks amounted to \$6,678,816.65. There were 90 public-works contracts awarded by the department during the year, involving obligations amounting to \$2,518,957.90.

DRY DOCKS.

No dry docks were begun or completed during the fiscal year. The only work of this nature now uncompleted is the dry dock at Pearl Harbor, work on which was completely suspended during the fiscal year.

POWER PLANTS.

The principal power-plant projects had been completed at the beginning of the fiscal year. The power plants at Pearl Harbor and Guantnamo were completed in essential particulars early in the

year. At the close of the fiscal year the new power plant at the naval torpedo station, Newport, R. I., had been completed, with the exception of minor details. The heating plants for the naval hospitals at Chelsea, Mass., and Newport, R. I., were under construction. The work at Newport was considerably further advanced than the work at Chelsea, due to contracts having been awarded earlier for the work at Newport.

The bureau has given special attention during the year to providing suitable measuring devices at the various power plants, to enable the keeping of a more accurate record of the performance of each plant, which makes it possible to detect a deficiency and to apply the necessary remedy. A system of periodical reports has been inaugurated by which accurate comparisons can be made and the benefit of the experience at one point placed at the disposal of those in charge of other plants. By this educational system it is hoped that the utmost efficiency may be maintained among the attendants on these plants, and heat, light, and power produced at a minimum expenditure.

PEARL HARBOR.

The upbuilding of this station, with the exception of the dry dock, has gone steadily forward according to the approved general plan. The officials and administrative force have moved from Honolulu to the station and occupied offices and quarters completed near the end of the fiscal year. A number of shop buildings and storehouses have also been completed and are ready for occupancy. Information in detail concerning works completed and under way during the year is given under the head of "Report of operations."

GUANTANAMO.

The emergency repair installation, including power plant, shop buildings, office buildings, quarters, etc., was completed during the year. The only important items remaining to be completed were the marine railway and the installation of machine tools in shop buildings. The work on both of these projects was well advanced at the close of the fiscal year. The work at the fuel-oil plant reported as authorized or uncompleted in the last annual report was completed during the fiscal year. At the radio station the steel towers and operating buildings were completed. All of the work appropriated for at the naval magazine was completed.

PUBLIC WORKS, BUREAU OF MEDICINE AND SURGERY.

The construction of buildings for the naval hospital at Pearl Harbor was carried on during the year and is now progressing rapidly. The present contract price for these buildings is \$130,016.29. The work was about 65 per cent completed at the close of the year.

Other work performed by this bureau for the Bureau of Medicine and Surgery was on the heating plants at Chelsea and Newport and miscellaneous items in the nature of minor improvements, such as the installation of sterilizing equipment, window screens, metal weather strips, etc., at naval hospitals. The detailed statement of operations will show the extent of practically all hospital work completed or under way during the year.

PUBLIC WORKS, MARINE CORPS.

The barracks and quarters at Pearl Harbor were completed during the early part of the fiscal year. The new barracks at Philadelphia were nearing completion. A set of bachelor quarters for eight officers at Puget Sound was about half completed. Many minor improvements were effected at the various marine barracks under the supervision of the bureau.

PUBLIC WORKS, BUREAU OF ORDNANCE.

The work coming under this head represents the operations at the various naval magazines, the Naval Torpedo Station, Newport, R. I., and the Naval Proving Ground, Indianhead, Md. As these public works have been appropriated for under the Bureau of Yards and Docks, beginning with the fiscal year 1912, a large share of the bureau's annual operations is involved in ordnance constructions. The value of the work completed during the year was approximately \$550,000. The value of work under way at the close of the fiscal year was in the neighborhood of \$375,000. Work in view amounts to over \$500,000.

RADIO STATIONS.

Work was actively prosecuted during the fiscal year on the high-power radio station in the Canal Zone. Erection of the towers was commenced toward the close of the fiscal year. Buildings in connection with this station were either completed or well under way. With the exception of the erection of the towers all work is being performed by the Panama Canal force. Contracts were executed during the year for towers for the secondary stations at Balboa and Colon, but no great amount of work had been performed at the site of either station.

Two 300-foot towers were erected at San Juan, P. R., and a power house was completed at Jupiter, Fla.

Contracts were awarded near the close of the fiscal year for two 300-foot towers at Chelsea, Mass.; two 400-foot towers and a building at the Naval Training Station, Great Lakes; one 200-foot tower at Beaufort, N. C.; three 300-foot towers at Key West, Fla.; two 300-foot towers and a building at New Orleans, La.; operators' quarters, Tatoosh Island, Wash., and two 300-foot towers at the navy yard, Washington, D. C.

COAL-STORAGE PLANTS.

Considerable progress was made on the large coaling plant at Pearl Harbor. Several contracts covering the purchase of locomotive cranes, dump cars, etc., were completed. The construction of the basin and wharf by station force was progressing favorably. Contract was let for the purchase of structural steel for coaling-plant trestles, etc., as well as a contract covering the erection of this steel. The material has not as yet been delivered at the station.

FUEL-OIL AND GASOLINE STORAGE PLANTS.

During the fiscal year the first 7,000-ton fuel-oil storage tank at the Boston Navy Yard and the additional 7,000-ton fuel-oil tank for

Pearl Harbor, authorized in the act of March 4, 1913, were completed. The second 2,500-ton tank at Norfolk was made ready for service, bringing the total storage capacity installed at the various fuel-oil and gasoline storage stations to 90,000 tons of fuel oil and 630,000 gallons of gasoline. The act of June 30, 1914, provides for the establishment of new fuel-oil stations at San Diego, Cal., Mare Island, Cal., and Puget Sound, Wash., as well as for increases in the existing plants at Melville, R. I., and Norfolk, Va. This will increase the total fuel-oil storage by 63,000 tons. No fuel-oil or gasoline tanks are building and no additional gasoline tanks have been authorized. The following table shows the distribution of fuel-oil and gasoline storage tanks built and authorized.

Place.	Fuel-oil tanks.			Gasoline tanks.	
	Built.	Authorized.	Capacity.	Built.	Storage.
			<i>Tons.</i>		<i>Gallons.</i>
Boston.....	1		7,000	1	90,000
Melville.....	2		5,000	1	90,000
Do.....		1	7,000		
Norfolk.....	2		5,000	1	90,000
Do.....		3	21,000		
Charleston.....	2		5,000	1	90,000
Key West.....	2		5,000	1	90,000
Guantanamo.....	7		30,000	1	90,000
Pearl Harbor.....	5		33,000	1	90,000
San Diego.....		1	7,000		
Mare Island.....		2	14,000		
Puget Sound.....		2	14,000		
Total built.....	21		90,000	7	630,000
Authorized.....		9	63,000		

IMPROVING THE HYDRAULICS OF MARE ISLAND STRAIT.

During the preceding fiscal year work had consisted almost entirely of dike work, the principal item being the extension of long dike No. 12 into San Pablo Bay, other work being minor extensions of spur dikes in Mare Island Strait and minor dredging. At the beginning of the fiscal year 1913 all this work had been practically completed.

In July, 1913, bids for dredging in Mare Island Strait on a yardage basis and providing for a 400-foot channel were received. Under the most advantageous of these bids the work with a 400-foot channel would have cost \$232,000, and with a 600-foot channel, \$280,200. These bids were rejected, and on September 6 other bids on a lump-sum basis were obtained. Award was made, and on November 26 the contractor was ordered to increase the channel width to 600 feet, at a total contract price of \$243,000. The work involved dredging the bar at the entrance to Mare Island Strait, dredging a 600-foot channel from the entrance to a point opposite the navy yard, dredging an anchorage or turning basin at the upper end of the yard, and the removal of Commission Rock. This dredging was begun October 22, 1913, and at the present time is 71 per cent completed.

Other minor work such as dredging and repairs to dikes has been carried on, and the city of Vallejo is carrying on diking work at an estimated cost of \$142,000, in order to retain spoil wasted by the

contractor from the channel, thereby reclaiming approximately 150 acres of submerged land on the Vallejo side, to the mutual advantage of the city and of the Government.

Owing to unusually favorable prices obtained, the project is approaching completion at a cost much below the Biddle Board's original estimates, and present conditions indicate that these works, if properly kept up, will accomplish the result of maintaining deep water in Mare Island Strait. The board's estimate for this work of upkeep was \$70,000 per annum. The total project is estimated as being approximately 81 per cent completed, and the estimated date for completion is September 12, 1915, the contract date for completion of the dredging.

FLOATING CRANES.

The 150-ton floating crane for the naval station, Pearl Harbor, was completed during the early part of the fiscal year. This crane was purchased under a contract which also covered the purchase of a crane of similar capacity for the Boston Navy Yard. The Boston crane was completed about the end of the fiscal year 1913, at a cost of \$294,397.92. The cost of the Pearl Harbor crane was \$334,522. These cranes are identical in construction, the larger cost of the Pearl Harbor crane being due to the isolated location of the station. Bids are now being invited for the floating revolving crane for the navy yard, Norfolk, Va., under the act of June 30, 1914.

"MAINTENANCE" AND "REPAIRS AND PRESERVATION."

The appropriation for the fiscal year 1914 under "Maintenance, Bureau of Yards and Docks," was \$1,500,000, and the appropriation under "Repairs and preservation" was \$800,000. These appropriations, which are relied upon to cover all items of general maintenance and repair at navy yards and stations, have been insufficient to meet the many demands for the upkeep of Government property. The increases in these appropriations have failed to keep pace with the increased value of public works, with the result that in many cases property must be allowed to deteriorate for want of adequate funds for repairs.

"CONTINGENT, BUREAU OF YARDS AND DOCKS."

The appropriation "Contingent, Bureau of Yards and Docks," for the fiscal year 1914 was \$30,000. Because of the smallness of this appropriation its use was confined to the most urgent items of an unforeseen character. The inadequacy of the appropriation has long been known, and for the fiscal year 1915 the appropriation is \$50,000, with the wording extended so as to provide for minor extensions and improvements to public works.

REPORT IN DETAIL OF OPERATIONS.

The construction work under the cognizance or supervision of the Bureau of Yards and Docks completed or under way at the end of the fiscal year 1914 may be described as follows. This does not take into consideration the innumerable small jobs, which, however, in

the aggregate entailed the expenditure of a considerable amount of money.

Annapolis, Md.—At the close of the fiscal year the underground electric distribution system at the Naval Academy was practically completed, at a cost of \$56,876.03. A bulkhead and wharf were completed at the rifle range at a cost of \$7,445.30. A timber bulkhead was completed at the Naval Academy at a cost of \$3,181.10.

The work under way at the close of the fiscal year may be summarized as follows: Reinforced-concrete wharf at the Naval Academy, to cost about \$110,000, was well under way; a sea wall at the engineering experiment station, to cost \$42,865, was about half completed; the highway bridge across Dorsey Creek was practically completed, at a cost of \$48,415.82. All of the work mentioned was performed or being performed under contract.

Boston, Mass.—The most important of the work completed at this yard was as follows: Officers' quarters, \$11,261.98; monitor for building No. 8, \$3,881; steel fuel-oil tank, \$15,530; railroad system extension, \$9,535.82.

Reconstruction of building No. 24, under contract, at a cost of \$53,577.27, was well under way. Paving by yard force, at an estimated cost of \$20,000, was about 80 per cent completed. The extension of the electrical system, estimated to cost \$10,000, was over half completed. Remodeling building No. 40, partly by contract and partly by yard labor, at an estimated cost of \$12,000, was about half completed. Remodeling building No. 77 for boat storage, including erection of a traveling crane and crane runways, estimated to cost \$15,000, was under way at the close of the year. Moving boiler shop from building No. 42 to building No. 106, including the necessary modifications in the buildings, estimated to cost \$25,000, was being performed by yard labor and was nearing completion. The excavation, embankment, tank foundation, piping, pump house, and rearrangement of railroad tracks in connection with the erection of the new steel fuel-oil tank, completed, as noted above, was progressing by yard labor. The estimated cost of this work is \$33,000.

Canal Zone.—At the high-power radio station at Caimito the foundations for the radio towers were practically completed. The estimated total cost of the foundations was \$38,000. The erection of the steel towers was commenced toward the close of the fiscal year. These towers are under contract at a cost of \$112,350. In addition to the construction of the foundations for the radio towers by canal force, the following additional work was being prosecuted by the local government: Construction of power house, operating building, and operators' quarters, estimated to cost \$20,000; sewer and water-supply systems for radio station, estimated to cost \$5,000; water supply for temporary work, \$2,500; concrete storehouse, \$1,200.

For the secondary radio stations at Balboa and Colon a contract was let for two towers for each place, the price being \$19,955, but no work had been performed at site at the close of the year. The necessary buildings and other improvements are being undertaken by the canal force. The work on the secondary stations, as a whole, is not very far advanced.

Charleston, S. C.—The work completed during the fiscal year was as follows: Storehouse for oil, \$14,070.88; locomotive and crane shed, \$4,285; purchase of coal car under contract, \$1,995.

The remodeling of the dispensary by yard labor, at an estimated cost of \$3,000, was nearly completed. The construction of torpedo-boat berths by contract, to cost \$284,230, was about one-fourth completed at the close of the year.

Chelsea, Mass.—At the naval hospital at this place the following minor contract work was completed during the fiscal year: Sterilizing equipment, \$999.50; window screens, \$1,615.23; window guards and cell door screens, \$1,528.43; metal weather strips, \$942.66; fire-protection system, \$3,607.

Other contract work was progressing as follows: Roadways, estimated cost \$17,500, nearly completed; electric distributing system, contract price \$5,167.10, 85 per cent completed; refrigerating equipment, to cost \$5,781.91, 70 per cent completed; underground electric transmission system for bringing power from the navy yard, Boston, to cost \$8,503, was well under way. A building for the new heating plant was progressing rapidly by Government labor, and was about 36 per cent completed at the close of the year; the present estimated cost of this work is \$19,920. A contract was awarded near the close of the year for a heating and pumping plant and distributing systems, to cost \$37,257. A contract was let for two 300-foot radio towers, to cost \$9,490, but no work was performed at site. The Government undertook the construction of the foundations for these towers at an estimated cost of \$1,200. Work on the foundations was under way at the close of the fiscal year.

Fort Lafayette, N. Y.—No work coming under the bureau's cognizance or supervision was completed at this magazine during the fiscal year, but the following work was under way at the close of the year: Extension of wharf, \$6,000, was being started; dredging by contract, estimated cost \$15,000, was about 35 per cent completed.

Fort Mifflin, Pa.—Several important pieces of work were completed during the fiscal year at this magazine. The extension of the electric and telephone service from Philadelphia to the magazine was completed at a cost of \$11,997.64. Other smaller jobs which were completed are as follows: Tanks for rain water, \$2,000; filling house for explosive "D," \$996.84; surveillance test house, \$1,997.30; magazine for explosive "D," \$4,483.50; magazine for internal segregated smokeless powder, \$3,000. The only work remaining uncompleted at the close of the year was the installation of the electric lighting system, estimated to cost \$8,500. This work, however, was nearing completion.

Island of Guam.—The only work completed at this station during the fiscal year was the construction of a wharf at Piti. This improvement cost \$2,596.07. At the close of the year work was in progress on the extension of the water-supply system, the final cost of which will be about \$25,000. Very little work, however, had been performed.

Guantanamo, Cuba.—The greater part of the work authorized under the appropriation for emergency repair installation was completed. The following work was performed under contract: Sea-water distilling plant, \$17,536; ice-making and refrigerating plant, \$7,977; two generating sets, \$5,196; purchase of structural steel for four shop buildings, \$22,114.70.

The following work was undertaken and completed by station force: Purchase of material (except structural steel) and erection of four shop buildings, \$42,694.98; distributing systems, \$28,172.06;

purchase of material and erection of miscellaneous frame buildings, \$64,905.23; installation of power-plant units and piping, \$31,945.48; construction of roads and walks, \$2,000; excavation and fill at new station, \$43,000; erection of stables and barracones, \$2,888.13.

The main objects remaining uncompleted at the close of the fiscal year were as follows: Marine railway, estimated cost \$10,000, about 75 per cent completed; installation of machine tools in machine shop and woodworking shop, estimated to cost \$8,000, about 75 per cent completed.

At the fuel-oil plant five tanks under contract were completed at a cost of \$73,560. The expenditures by station force for foundations, pipe line, etc., in connection with these tanks amounted to \$23,000. There was an expenditure on account of work performed by local force of about \$9,000, covering the erection of earth barriers for fire protection for fuel-oil and gasoline tanks, for earth fill, for pipe-line trestles, and for the purchase of submarine cable for power feeders to fuel-oil pump house. There was no work in progress on the fuel-oil plant at the close of the fiscal year.

At the radio station two steel towers were completed by contract at a cost of \$25,878.45. Three buildings, viz, transmitter house, receiving building, and operators' quarters, were also completed by contract at a cost of \$14,645.20. There were miscellaneous small expenditures by station force for accessories for the radio station.

The following work was completed at the naval magazine by Government labor: Magazine building, \$15,000; shell house, \$15,000; one set quarters and office, \$8,500; and construction of wharf, including clearing, grading, and equipment, \$12,500. There was no work of importance remaining uncompleted at the naval magazine at the close of the fiscal year.

Hingham, Mass.—The following work was completed at this magazine: Dredging, \$25,566.36; general magazine building, \$12,350; magazine for smokeless powder, \$16,291.68; railroad track to filling house, \$1,890. The extension of a pier, under contract at \$13,671.88, was about 95 per cent completed at the end of the year.

Indianhead, Md.—During the year the following work was completed by contract: Wharf, approach, and steel framing for a coal-hoisting tower, \$9,079; storehouse for nitrate of soda, \$14,989. The local force completed the following improvements: Construction of diphenylamine mixing house, \$1,400; railroad extension to new nitrating house, \$1,895.39; and construction of one set of double quarters for officers, \$12,000. At the close of the year the following work was under way: Construction of gravity nitrating house, estimated to cost \$15,000, about 70 per cent completed; extension of magazine No. 1, estimated to cost \$10,704.61, about 43 per cent completed. Both of these improvements were being undertaken by the local force.

Iona Island, N. Y.—The completed work here consisted of the construction of two magazine buildings at a cost of \$30,000 by local force; construction of an extension to the shipping house and replanking dock by Government labor at a cost of \$4,750, with the exception of the structural steelwork and fittings, which were furnished under contract at a cost of \$5,220; lunch room and lockers for employees, by local force, at a cost of \$2,000; and construction of a blacksmith

shop by local force at a cost of \$2,500. The uncompleted work consisted of the construction of quarters for gunner, which was being undertaken by the local force at an estimated cost of \$6,000. The work was fairly well started by the close of the year.

Key West, Fla.—No work of any magnitude was performed at this station during the year. A number of paving improvements were completed by the station, at a cost of about \$7,300. The transfer and installation of power-plant machinery to and in building No. 21 was practically completed by the local force at the close of the fiscal year. The ultimate estimated cost of this work was \$16,000. A contract was awarded for the construction of three 300-foot radio towers, but no work was actually performed at site. The foundations for these towers were constructed by the station, at a cost of \$3,510.17. The contract price for the towers is \$14,550.

Lake Denmark, N. J.—All of the work which was completed at this magazine during the year was performed by the local force, and consisted of the following improvements: Locomotive house, \$2,500; magazine building, \$15,000; water-pipe mains, \$4,000; and pump house, \$1,000. The fire and boundary wall, estimated to cost \$7,500, was about 50 per cent completed at the close of the year.

Mare Island, Cal.—The most important of the work performed at this yard was as follows: Installation of electric capstans, \$5,920; construction of gunners' quarters, naval magazine, \$5,000; construction of a magazine building, \$8,450; addition to kitchen at marine barracks, \$3,044. The foregoing work was performed by contract. The following work was performed by yard labor: Placing floors in joiner shop and boat shop, \$38,816.79; reinforcement of dikes, \$14,262.60; concrete walks, street and road pavement, \$15,000.

Work not completed at the close of the year was as follows: Dredging by yard force, estimated cost \$29,000, nearly completed; laying terra-cotta sewer pipe, drains, etc., by yard labor, estimated cost \$10,000, about 75 per cent completed; asphaltic macadam pavement at dry docks, building No. 108, etc., being performed by yard labor, at an estimated cost of \$10,000, about half completed; extension of railway system, estimated cost \$5,000, about half completed; purchase and installation of fire pumps under contract, at a cost of \$7,360, no work performed at yard; installation of salt-water mains for fire protection by yard labor, at an estimated cost of \$18,000, completed so far as possible and awaiting delivery of fire pumps to complete installation of the system; extension of underground conduit system by yard labor, at an estimated cost of \$30,000, about two-thirds completed; dredging in Mare Island Strait under contract, at a cost of \$243,000, about half finished; construction of a magazine building, contract price \$11,950, well under way.

New Orleans, La.—No work of importance was performed at this station. Contracts were executed near the end of the fiscal year for two 300-foot steel radio towers, to cost \$9,760, for foundations for these towers, to cost \$2,450, and for a one-story brick building for the radio station, to cost \$5,780.

Newport, R. I.—At the naval hospital a number of minor improvements were completed, as follows: Sterilizing equipment, \$999.50; kitchen equipment, \$3,510.67; window screens, \$1,576.67; window guards and cell-door screens, \$1,458; metal weather strips, \$942.67. Uncompleted work under contract was as follows: Building for heat-

ing plant, \$28,492, nearly completed; refrigerating equipment, \$5,872.22, 85 per cent completed; heating-plant equipment and distributing systems, \$36,874.72, 40 per cent completed. In addition to the uncompleted work under contract, the local force was engaged upon the construction of a wharf for the hospital, at an estimated cost of \$3,500. This work was about 40 per cent completed at the close of the year.

At the torpedo station the new power plant, including building and equipment, was practically completed at the close of the year. Individual items completed during the year were as follows: Foundations for power house, \$11,776.77; power-plant building, \$31,015.88; hot-water heaters, \$2,425; boilers and settings, \$17,698; centrifugal pumps, \$6,559; switchboard and wiring, \$11,736. The power-plant piping system was practically completed at a contract price of \$7,970.94, as was the contract for fuel-oil engines, amounting to \$37,355. The two air compressors under contract, at \$8,565, had been installed, but because of certain defects had not been accepted. The contractor is now engaged upon the correction of these defects. Other work under progress at the torpedo station at the close of the fiscal year was: Construction of two wharves by local force, at an estimated cost of \$10,000, practically completed; construction of a concrete and timber wharf on Rose Island, at a cost of \$8,683, about 45 per cent completed.

At the naval training station a number of objects were completed. The most important were as follows: Extension of the water-supply system, \$12,572; renewals and repairs to administration building, \$18,618; remodeling auditorium, \$9,568; concrete floor, safety treads, etc., Barracks B and C, \$5,365.92; ferry landing, \$4,222.65. The uncompleted work consisted of changes in salt-water suction line, \$2,756.40; replastering in Barracks B, \$2,425.54; underground electric distributing system, \$6,715; purchase and installation of transformers, \$1,425; sea wall and fill, \$4,000.

At the naval coal depot at Melville, a section of sea wall was completed at a cost of \$9,970.08, by contract, as well as a quarters for machinist, also by contract, at a cost of \$4,810.

New York, N. Y.—A number of important pieces of work were completed here. These improvements were as follows: Granite-block paving, \$33,939.15; tracks around Dry Dock No. 4, \$6,200; construction of Piers E and F, \$103,302.11; wood-block paving, \$14,268.96; paving on coaling pier, \$13,649.03; removal of cob dock, \$105,410.54; raising freeboard of floating crane *Hercules*, \$23,770.46. At the close of the year the contract for a 50-ton locomotive crane, costing \$47,950, was practically completed. Aside from this work nothing of importance remained unfinished.

Norfolk, Va.—At the marine barracks the yard force installed a sump pit and sewage-ejecting plant at a cost of \$8,443, defrayed by Marine Corps funds. A section of sea wall was completed by contract at a cost of \$86,069.10. Cable was placed on this sea wall by yard labor at a cost of \$24,298.34 for purchase of material and installing same. The water front was dredged at a cost of \$18,266.86.

At the naval magazine, St. Juliens Creek, two magazine buildings were completed by contract at a cost of \$26,640. Two sets of quarters for magazine attendants were constructed by navy yard force at a cost of \$6,619.10.

The uncompleted work consisted of the erection of light temporary barracks at St. Helena by local force at an estimated cost of \$14,450, repairs to Dry Dock No. 3, by yard labor, estimated to cost \$10,000, and construction of a new sea wall, the contract price for which is \$81,350. This important work was about 20 per cent completed at the end of the year, and the work was progressing favorably. At the naval hospital refrigerating equipment was being installed by contract, at a cost of \$8,861.29. The work was nearing completion at the close of the year. At the naval magazine a wharf and approach were being constructed by Government labor at a cost of \$37,592.

Olongapo, P. I.—Two sets of quarters for chemist and subinspector were completed at the naval magazine. Renewal of a dock had been commenced. The cost of the quarters was about \$6,000. The estimated cost of the renewal of the dock is \$4,000.

Pearl Harbor, Hawaii.—Many important projects were completed during the year at this station, while many still remained uncompleted.

* * * * *

Pensacola, Fla.—A considerable amount of work was performed at this yard in connection with fitting up the station for occupancy by the Marine Corps. The work was performed by the yard force, and the cost amounted to about \$6,000.

Philadelphia, Pa.—The more important work completed at this yard is described as follows: Construction of Pier No. 5, \$123,285.63; construction of toilet for officers at Dry Dock No. 2, \$7,352.35; construction of gasoline-storage building, \$9,999.25; dredging in reserve basin, \$286,011.19; dredging Delaware water front, \$39,644.61; construction of Pier D and section of quay wall, \$49,999.47; contract for three electrically driven capstans for Pier 5, \$9,270.

At the close of the year the following work remained uncompleted: Extension of electric circuits and pipes for water and compressed air on Pier No. 5, estimated cost \$13,455.62, nearly half completed; reconstruction of building No. 7 for central offices, work being performed by yard labor and estimated to cost \$50,000, well advanced; placing fenders and chocks on sea walls and pier by yard force, at an estimated cost of \$12,000, nearing completion; extending water system by yard labor, estimated cost \$15,000, well advanced; paving on and around Pier D, estimated cost \$10,000, just started; installation of runway for crane, building No. 10, at a cost of \$10,000, nearly completed; construction of marine barracks by contract, to cost \$175,000, nearing completion; steam-heat distribution system for marine barracks, under contract at \$12,298, work just about ready to be started; work by local force, at estimated cost of \$22,000, on steam-heating system well advanced; paving on Marine Corps reservation, estimated cost \$12,688, nearing completion.

Portsmouth, N. H.—During the year a locomotive crane was purchased at a cost of \$6,626. An extension to the foundry was completed at a cost of \$9,643, being contract work. An electric traveling crane was purchased for the foundry at a cost of \$6,350. The combined railway and highway bridge was completed by contract at a cost of \$96,324. Quarters for commanding officer, naval prison, were completed at a cost of \$11,538. Track work and construction of

storage room for cranes involved an expenditure of \$5,437.47. A garbage crematory was constructed by contract at a cost of \$4,380.

At the naval hospital considerable work was completed during the year. The new hospital buildings were completed during the early part of the fiscal year, the contract price for the Portsmouth group being \$300,007.64. A road to the hospital was constructed at a cost of \$6,248.91. Minor work performed at the hospital was as follows: Sterilizing equipment, \$999.50; kitchen equipment, \$3,510.67; metal weather strips, \$942.67; window guards and cell-door screens, \$1,553; window screens, \$1,586.67. All of this equipment was furnished by contract.

The construction by yard labor of the Kittery approach to the new railway and highway bridge, at an estimated cost of \$17,047.77, was well under way. The quay wall extension, under contract at \$95,695, was nearing completion. The progress on this work has been very slow.

The only important work under progress at the naval hospital was the installation of refrigerating equipment, under contract at \$5,827.36. The work was nearly half completed at the close of the year.

Puget Sound, Wash.—The main improvements completed were as follows: Railroad tracks around Dry Dock No. 2, \$10,086.65; electrical installation around Dry Dock No. 2, \$18,311; two officers' quarters, \$16,292.10; construction of Pier No. 5 and dredging, \$78,298.74; extension of Pier No. 8, \$9,865; purchase and installation of four electric traveling cranes for foundry, \$16,825; construction of Pier No. 4, \$163,848.

At the naval magazine the following work was completed: Quarters for inspector of ordnance, \$8,694.50; filling house, \$1,496.40; quarters for gunner, \$5,928; bag factory and storehouse, \$14,987.55.

The following work remained uncompleted at the navy yard: Pier 6, renewals and improvements, nearing completion, at a cost of about \$25,000; fireproofing south end of building No. 59 (pattern shop), under contract at \$9,000, but work not commenced; clearing site and constructing foundations for ship fitters' shop, mold loft, boiler shop, and steel storage buildings, \$16,000, nearing completion; furnishing and erecting by contract the steel framework of above buildings, \$148,570; construction of above buildings, aside from furnishing and erecting steel framework, \$89,930.15; air compressor, accessories, and piping, \$39,800, no work performed at the yard, as material was being fabricated at the contractor's shops; construction of concrete pavements and sidewalks by yard labor, at an estimated cost of \$15,107.24, just started; construction of sewer in western portion of the yard by local force, estimated to cost \$19,200, well under way; installation of heating system pumps, at a cost of \$6,323 under contract, no work performed at yard, fabrication being under way at contractor's shops; rebuilding Pier No. 1 by yard force, at an estimated cost of \$10,000, nearing completion; purchase of two 15-ton locomotive cranes for coaling plant, at cost of \$17,760, cranes delivered, but final tests not completed.

At the marine barracks the construction of one set of bachelor officers' quarters, at a contract price of \$33,447.07, was nearly half completed.

At the naval magazine a quay wall was being erected by contract at a cost of \$12,936. The work was well under way at the close of the year.

Washington, D. C.—The new foundry, costing \$200,000, was completed during the year. The greater part of the work on this building was performed under three separate contracts. A small amount of work was performed by the local force. Sections of new quay wall were completed under two contracts at a cost of \$59,451. The extension of the electric plant cost \$21,000.

At the naval hospital roadways were constructed at a cost of \$9,154.

The renewal of floors in shop buildings at the navy yard, estimated to cost \$25,000, was nearing completion. Water-front improvements, estimated to cost \$19,600, had been started. The installation of a 150-ton railroad-track scale was nearing completion, at a cost of about \$8,000. A contract was let for the construction of two radio towers, to cost \$8,765, but no work had been performed at site. A radio building was being erected by the yard force at an estimated cost of \$7,000. The work was about half completed at the close of the year.

General.—An ice-making and refrigerating plant was completed at the naval disciplinary barracks, Port Royal, S. C., at a cost of \$6,121. At the naval radio station, Jupiter, Fla., a power house was completed by contract at a cost of \$2,718.97. Two 300-foot steel radio towers were completed at the radio station, San Juan, P. R., at a cost of \$16,911.25. At the coal depot, San Diego, Cal., repairs to the fender system and relocation of the landing float were effected by contract at a cost of \$10,325. The water pipe from the naval training station, San Francisco, Cal., to Oakland, Cal., was completed at a cost of \$8,675.

H. R. STANFORD.

REPORT OF THE CHIEF OF BUREAU OF NAVIGATION.

DEPARTMENT OF THE NAVY,
BUREAU OF NAVIGATION,
Washington, D. C., November 1, 1914.

The following statement of the work of the bureau, together with certain recommendations, is submitted:

OPERATIONS IN MEXICO.

The greater part of the personnel of the Navy has been employed since March, 1914, in service in Mexican waters, where the endurance of the officers and men has been subjected to a most severe test with the gratifying and expected result of demonstrating that the personnel of the Navy is capable of withstanding the hardships of protracted severe service in the Tropics with the cheerful optimism that history and the traditions of the service promised.

In the operations connected with the occupation of the city of Vera Cruz, Mexico, on April 21, 22, and 23, 1914, the conduct and

efficiency of the entire naval force and the numerous conspicuous acts of heroism performed by individuals was in entire accord with the most treasured traditions of the naval service.

Rear Admiral Frank F. Fletcher, in command of the naval forces in Mexican waters, landed a force at Vera Cruz, Mexico, on April 21, 1914, seized the customhouse, and took full possession of the city after severe fighting for several days. The landing force, consisting of 787 officers, sailors, and marines, was under the immediate command of Capt. William R. Rush, United States Navy, of the U. S. S. *Florida*. The landing was unopposed, but the force was fired upon soon after the seizure of the customhouse.

On April 22 Rear Admiral Charles J. Badger, commander in chief of the Atlantic Fleet, arrived and reenforced the forces ashore by seamen and marine battalions from the *Arkansas*, *New Hampshire*, *South Carolina*, *Michigan*, and *New Jersey*. Rear Admiral Fletcher then took command of the forces on shore and remained in command until after the city was fully pacified, when it was turned over to a brigade of the United States Army under Gen. Funston. The seamen brigade was then withdrawn to the ships and the marine brigade remained ashore for service with the Army. Commander Herman O. Stickney, United States Navy, assisted by Lieut. Reuben B. Coffey, was appointed collector of customs, and Paymaster David Potter, United States Navy, fiscal agent. These officers remained ashore and served under the military government. During the occupation Commander Edward L. Beach acted as collector of customs for six weeks.

Surgs. G. M. Guiteras and R. H. Von Esdorf of the United States Public Health Service, experts in sanitation and quarantine, were attached to Admiral Fletcher's staff, and their expert knowledge of public-health matters was of great assistance in organizing and operating a health department of the city.

The naval landing force was under continuous fire from Mexican soldiers and snipers for two days, and the exceedingly small number of casualties, 15 killed and 56 wounded, can only be accounted for by the efficient and thorough work of all the officers and men engaged. While the conduct and efficiency of every officer and man employed in the operations at Vera Cruz was worthy of the highest commendation, the department, in accordance with specific recommendations made by Rear Admiral Fletcher, issued medals of honor in commemoration of this conspicuous event to the following-named men:

Henry N. Nickerson, boatswain's mate, second class, U. S. S. *Utah*.
 Abraham De Somer, chief turret captain, U. S. S. *Utah*.
 Joseph G. Harner, boatswain's mate, second class, U. S. S. *Florida*.
 George Cregan, coxswain, U. S. S. *Florida*.
 Harry C. Beasley, seaman, U. S. S. *Florida*.
 Lawrence C. Sinnett, seaman, U. S. S. *Florida*.
 Percy A. Decker, boatswain's mate, second class, U. S. S. *Florida*.
 Charles F. Bishop, quartermaster, second class, U. S. S. *Florida*.
 James A. Walsh, seaman, U. S. S. *Florida*.
 Charles L. Nordsiek, ordinary seaman, U. S. S. *Florida*.
 Fred J. Schnepel, ordinary seaman, U. S. S. *Florida*.
 Edward A. Gisburne, electrician, third class, U. S. S. *Florida*.
 Berrie H. Jarrett, seaman, U. S. S. *Florida*.
 William Zuiderveld, hospital apprentice, first class, U. S. S. *Florida*.

Highly commendatory letters for gallantry in action were written to the following-named officers and men, and made a part of their official service records:

Rear Admiral Frank F. Fletcher, U. S. N.
 Capt. William R. Rush, U. S. N.
 Capt. Harry McL. P. Huse, U. S. N.
 Capt. Edwin A. Anderson, U. S. N.
 Commander William A. Moffett, U. S. N.
 Commander Herman O. Stickney, U. S. N.
 Commander William K. Harrison, U. S. N.
 Lieut. Commander Allen Buchanan, U. S. N.
 Lieut. Commander Arthur B. Keating, U. S. N.
 Lieut. Commander Rufus Z. Johnston, U. S. N.
 Lieut. Commander Harry E. Yarnell, U. S. N.
 Lieut. Richard Wainwright, U. S. N.
 Lieut. Guy W. S. Castle, U. S. N.
 Lieut. George M. Courts, U. S. N.
 Lieut. Frank J. Fletcher, U. S. N.
 Lieut. Frederick V. McNair, U. S. N.
 Lieut. Julius C. Townsend, U. S. N.
 Lieut. Adolphus Staton, U. S. N.
 Lieut. John Grady, U. S. N.
 Lieut. Charles C. Hartigan, U. S. N.
 Lieut. James P. Lannon, U. S. N.
 Lieut. Isaac C. Johnson, jr., U. S. N.
 Lieut. (j. g.) Jonas H. Ingram, U. S. N.
 Ensign Theodore S. Wilkinson, jr., U. S. N.
 Ensign George M. Lowry, U. S. N.
 Ensign Oscar C. Badger, U. S. N.
 Ensign Paul F. Foster, U. S. N.
 Ensign Hugh C. Frazer, U. S. N.
 Ensign Edward O. McDonnell, U. S. N.
 Ensign Elliott Buckmaster, U. S. N.
 Ensign David R. Lee, U. S. N.
 Ensign Lyal A. Davidson, U. S. N.
 Surg. Middleton S. Elliott, U. S. N.
 Surg. Cary D. Langhorne, U. S. N.
 Chief Boatswain John McCloy, U. S. N.
 Niels Drustrup, chief turret captain.
 Walter B. Weeks, ordinary seaman.
 George Berton, boatswain's mate, second class.
 Farrell N. C. Overall, boatswain's mate, first class.
 Frederick E. Norman, boatswain's mate, second class.
 James J. Dermody, coxswain.
 George J. Smith, fireman, first class.
 Arthur J. Fogarty, gunner's mate, third class.
 Harry D. Shipman, coal passer.
 William J. Glynn, seaman.

John Neukom, seaman.
 James A. Duryea, seaman.
 Charles D. Cameron, ordinary seaman.
 Robert Semple, chief turret captain.
 George E. Bancroft, seaman.
 Benjamin W. Claggett, hospital apprentice, first class.
 Harry Smith, boatswain's mate, first class.
 Roy Halloway, gunner's mate, first class.
 Paul W. Green, gunner's mate, third class.
 Fred E. Jorgensen, seaman.
 George E. Bent, boatswain's mate, first class.
 Walter E. Stevens, seaman.
 William J. Genereux, boatswain's mate, second class.
 Joseph Mueller, coxswain.
 Frank F. Smalley, coxswain.
 Samuel D. Barr, chief yeoman.
 Gustave Brodbeck, chief gunner's mate.
 Clarence R. Harshberger, seaman.
 Frederick Nanz, ordinary seaman.
 Elmer Van Camp, fireman, first class.
 Robert M. Ash, fireman, first class.
 John B. McDonald, oiler.
 Augustin O'Neill, chief boatswain's mate.
 Herman H. Roloff, coxswain.
 John J. McLaughlin, boatswain's mate, second class.
 Robert A. England, seaman.
 Edwin C. Wertman, gunner's mate, first class.
 John H. Hendrickson, hospital apprentice, first class.
 James A. Anderson, coxswain.
 Robert G. Hart, ordinary seaman.
 John W. Hawkins, ordinary seaman.
 Edwin J. Cantwell, seaman.
 Solomon Clay, ordinary seaman.
 Daniel J. Reilly, boatswain's mate, first class.
 George Bradley, chief gunner's mate.
 James P. Cush, boatswain's mate, first class.
 Emil Tyburec, ordinary seaman.
 Joseph H. Risacher, boatswain's mate, second class.
 Johan Svesson, gunner's mate, first class.
 Clarence E. Williams, boatswain's mate, first class.
 George H. Boyd, quartermaster, first class.
 Augustus J. Hallberg, gunner's mate, first class.

MEDALS OF HONOR.

There is at present no provision of law which permits the award of medals of honor to officers of the Navy, and it is recommended that such legislation be enacted as is necessary in order to authorize the

issue of medals of honor to such officers as may by extraordinary gallantry in action be, in the opinion of the department, worthy of such recognition.

During the seizure and occupation of Vera Cruz there were a number of officers and enlisted men recommended by Admiral Fletcher for gallantry and extraordinary heroism in battle. Although the officers and men fought side by side, the department was not able under the provisions of law to recognize the gallant deeds of the officers in the same manner as it recognized the gallant deeds of the men by awarding to the latter medals of honor.

TORPEDO TRAINING SHIPS.

The rapid development of torpedoes has for some years indicated the necessity for specially trained torpedo officers and men on board all vessels that carry these modern weapons, but the continued shortage of officers and the demand for their services at sea has heretofore prevented satisfactory training of a large number of expert torpedo officers.

This difficulty has within the last year been in a measure overcome by establishing a torpedo school on board the U. S. S. *Montana*, which vessel has been fitted with modern torpedo installation for this purpose.

It is the intention of the bureau that the course of torpedo training on the *Montana* shall last for five months, in which time, by exceptional application, it is hoped that an officer will be able to qualify for torpedo work in the battle fleet or the flotillas, and that men may become competent members of torpedo crews.

It is found that 20 officers can be advantageously instructed in one class, and by completing two classes of 20 officers each year it is expected that a sufficient number of qualified torpedo officers can be maintained to meet the urgent needs of the service.

The necessity for this special course in torpedo work has been considered sufficiently urgent to warrant a still further reduction of the number of junior officers and selected men available for general duty on board the battleships, and while the bureau realizes the present existing shortages of personnel in the fleet, it is believed that the increased efficiency acquired by the officers and men during their five months' course of training will be a sufficient return for the temporary loss of their services on the ships.

ATTENDANCE UPON POSTGRADUATE COURSES.

It is with gratification that I am able to report that an increase in the number of officers of higher grades to a course of instruction at the Naval War College has been made as well as an increase in the number of young officers assigned to postgraduate courses at the Naval Academy. There are now at the War College 20 officers in the grades of captain, commander, lieutenant commander, and lieutenant, and 50 lieutenants and lieutenants (junior grade) taking postgraduate courses in the various branches of engineering and ordnance.

It is hoped that when the number of officers is increased sufficiently so that they can be spared from their regular duties all line

officers eventually will have the benefit of a postgraduate War College course, and that all young officers who desire it may have a thorough postgraduate course after serving a period of five years at sea.

THE OFFICERS' LIST (LINE).

The list of officers of the line of the Navy stood as follows on July 1, 1914:

Rear admirals.....	26
Captains.....	90
Commanders.....	121
Lieutenant commanders.....	205
Lieutenants.....	351
Lieutenants (junior grade).....	384
Ensigns.....	704
Total.....	1,881

Of these 1,881 line officers, 793 are above the rank of lieutenant (junior grade) and 1,088 of or below that rank. This condition is abnormal, and should be remedied. The matter of promotion, too, is a serious question, and becomes worse each year as each new class of ensigns (numbering on the average about 160) enters the service. If we say that about 150 members of the classes complete the three years' service in grade of ensign each year, while an average of but about 40 lieutenants (junior grade) are being promoted up, it leaves a surplus to be added to the latter grade each year of something like 110, all eligible for promotion but awaiting vacancies, not more than 40 of which are likely to occur in any one year under the present law. It will readily be seen that the junior ensigns of the class of 1915 can not expect to be promoted to lieutenant commander, under such conditions, under 40 years, or at a time when they will have reached the statutory retirement age of 62.

In other words, all the officers in the service fit for duty would be junior lieutenants and ensigns. The lieutenants, lieutenant commanders, commanders, captains, and rear admirals would be officers who have only recently stepped up from having been worn-out junior lieutenants, and would only be waiting to reach the retiring age. It is needless to comment on such a situation. If the matter were not so serious it would be ludicrous.

The bureau has no doubt that Congress will remedy this condition of the personnel, but considers that it is its duty to recommend that speedy action be taken. Nothing can be done without increased cost, and the longer action is delayed the greater will be the cost.

About 50 per cent of the 351 lieutenants are now performing duty which normally should be performed by lieutenant commanders, while about 10 per cent are performing watch duty in the fleet which should be the normal duty of the grade.

The recent Mexican situation created an emergency that made great demands upon the commissioned personnel. It particularly illustrated the shortage of personnel compared with the number of ships we possess, and would be compelled to commission in time of war. Practically all officers on ships in Mexican waters (except heads of departments) were in the grade of ensign, and nearly half of the heads of departments were lieutenants. This state of affairs

obtains with more than 75 per cent of the line officers at sea—a greater percentage than ever before known in time of peace. A redistribution of officers in the various grades of the line is urgently needed and recommended. This redistribution should be made as soon as practicable, and should place the line in a condition that would enable this bureau to assign officers of fitting rank and experience to positions commensurate in importance. A personnel board, of which the Assistant Secretary of the Navy is the senior member, is now in session for the purpose of considering and recommending to the department appropriate legislation looking toward increasing the efficiency of the Navy by causing a healthy flow of promotion throughout the various grades, thus enabling the most capable and efficient officers to reach the higher grades at an age when they are capable of rendering the most efficient service in those grades, and with experience commensurate with the duties and responsibilities thereof. This board is not to consider questions of rank, pay, or increases in total number now provided by law for any corps, and its recommendations are to be only of such a nature as to properly regulate promotions at as small an increase in cost as practicable.

Distribution of officers on Oct. 15, 1914.

	Line.	War- rant offi- cers.	Medi- cal Corps.	Pay Corps.	Civil engin- eers.	Naval con- struc- tors.	Medi- cal Re- serve Corps.	Den- tal Corps.	Chap- lain.
1. On sea duty.....	1,274	430	157	105	0	1	2	10	17
2. Shore duty beyond sea ¹ ...	33	25	26	12	7	5	0	3	1
3. Educational work, train- ing stations ²	112	3	5	0	0	0	0	0	0
4. War College postgradu- ates and students.....	62	0	0	1	0	0	34	0	0
5. Aviation duty ³	15	0	0	0	0	0	0	0	0
6. Sick and waiting orders...	50	38	9	10	1	4	0	0	1
7. Shore duty other than 3 and 4 ⁴	329	218	133	90	30	66	13	13	5
	1,875	714	330	218	38	76	49	26	24

Includes naval attachés.

¹Includes 72 at Naval Academy and 3 War College staff (75).

²North Carolina sea status.

⁴Includes 21 line officers restricted by law to shore duty only.

EXAMINATION OF OFFICERS FOR PROMOTION.

The practice of ordering officers before supervisory boards for professional examination for promotion has been continued, since inaugurated on a broad scale last year, and will be continued in the future. It has resulted in great saving in mileage, and keeps officers away from their duties for a much shorter time. Besides, it frequently enables the bureau to have officers examined much earlier than would be the case were it necessary to await an opportunity to order them to appear in person before a statutory board.

PAY CORPS.

The policy of the department at present is to appoint all officers of the Pay Corps from among enlisted men of the Navy. The examinations of applicants are held at stated times (one at present being held in August of this year) at the various yards and stations. There are

now 12 vacancies in the Pay Corps and about 50 applicants from the enlisted force have been permitted to compete for the same. This policy opens a field of advancement to the enlisted men of the Navy and will enable those who are worthy to obtain commissions. None but those of good moral character and of good record in the service are allowed to compete.

The opportunity open to every enlisted man of the requisite qualifications to gain a commission in the Navy by his own efforts is an incentive to increased efficiency as well as to a high standard of morale among the enlisted force.

PAYMASTERS' CLERKS.

The situation of paymasters' clerks is unfortunate. The present law requires the appointment of a clerk to expire upon the detachment of his pay officer and is often an injustice to the clerk who finds himself without employment through no fault of his own, and usually entails considerable expense to the Government in paying mileage to his home and also mileage of a new clerk for the same pay officer to duty, and in addition makes work that should be unnecessary in this bureau.

A bill proposing to put them in the same status as warrant officers is now pending before Congress, has the approval of the department, and may pass. This bill would limit all future appointments of paymasters' clerks to the enlisted personnel of the Navy and would thus afford a field for advancement for the yeoman branch, the members of which are not now eligible for advancement to warrant grade.

CHAPLAIN CORPS.

The corps of chaplains has been placed on a firm basis dependent upon the total personnel of the Navy and Marine Corps combined, one chaplain to each 1,250 personnel. This will give each large ship a chaplain, likewise one for all important shore stations.

NAVAL ACADEMY ENTRANCE EXAMINATIONS.

The results of the entrance examinations held as usual in February and April of the current year indicate that these examinations are now of about the proper degree as to severity and scope. It is very desirable that these examinations should not be so severe or comprehensive as to bar any young man who has a thorough grounding in what are usually termed the common school branches, and yet that they should be difficult enough to reasonably insure that the young men entering are sufficiently advanced to successfully pursue the required course without too large a percentage of failure, and without lowering the high standard of scholarship that is traditional at the Naval Academy.

The law permitting the Secretary of the Navy to annually appoint 15 enlisted men as midshipmen in the order of merit after competitive examination was enacted on the last day of the fiscal year. Anticipating the enactment of the law the bureau had made preparations for holding the examination on every ship and at every station where there might be candidates, in order that there would be time for successful candidates to enter before October 1, 1914. Considering the short time that the enlisted candidates had for preparation it is

encouraging to note that as many as five passed the examination and entered the academy. It is the bureau's belief that many more than 15 will meet the requirements next year and during succeeding years.

COURSE OF STUDY OF NAVAL ACADEMY.

The course in English studies has been materially improved and modernized during the past year and steps have been taken to encourage and promote literary tastes and literary work. The formation of voluntary literary and debating societies will be invited.

Summer course for fourth class.—With the above objects specially in view, a systematic course of reading, lectures, debating, etc., was outlined for the fourth class during the past summer, in order to direct their thoughts in literary channels at the beginning of their career.

A more general and habitual use of the library will be encouraged, and a large number of selected books have been placed in the various recreation rooms of Bancroft Hall, where they may be accessible at all times.

POSTGRADUATE COURSE.

This course has been developed and improved, and is in general on a satisfactory basis. Including those under instruction at the Naval Academy, Columbia University, Bureau of Ordnance, Massachusetts Institute of Technology, and a few scattered elsewhere, about 50 young officers had advantage of this instruction. The majority of them took courses embracing steam and electrical engineering, and it is anticipated that the expert technical knowledge demanded in the naval service in these branches will be efficiently supplied by post-graduates in these subjects. It is hoped that the Marine Reservation, barracks and officers' quarters, which are situated conveniently to the Naval Academy may eventually be obtained in a manner satisfactory to all concerned, for the use of the postgraduate school. To have reading rooms, lecture rooms, library, quarters, athletic and recreation facilities, etc., of the postgraduate students, all in close proximity to each other, would add very materially to the efficiency of the school, and the Marine Corps property above referred to could be made to admirably fulfill this purpose.

ACADEMIC FEATURES.

Constant effort is made to perfect the course of instruction, keeping always in mind the education that is most essential and necessary to a naval officer without ignoring the importance of a broad general grounding.

An important change in policy has been to transfer the Naval Academy organization to sea during the summer months. For this purpose a practice squadron of three battleships with the superintendent as squadron commander is utilized. All officers of the ships are composed of officers who have been regularly assigned to the Naval Academy and who have been instructors in the various departments. During the past summer the practice squadron made a cruise to European ports. The bureau recommends that the cruise be made to San Francisco via the Panama Canal next year, and that the squadron remain at Panama long enough to give opportunity for all midshipmen to gain a comprehensive knowledge of the important features connected with the canal.

RADIO SERVICE.

The report of the superintendent of the Radio Service for the calendar year ending December 31, 1913, who has charge of the preparation of regulations, etc., for the Naval Radio Service and control of all commercial work handled by naval radio stations, is published in a separate pamphlet as Appendix No. 4 to this report. The total number of commercial messages handled by all stations and ships of the Navy for the average period of 10 months ending December 31, 1913, were 17,710 and the total receipts were \$20,860.52.

During the past few months the President ordered strict censorship of all messages passing through commercial radio stations in order to effectually carry out the neutral policy of this Government, and directed the Secretary of the Navy to carry such orders into effect. In compliance with such directions, the Secretary of the Navy detailed certain naval officers to duty at the various radio stations in order that the proper censorship of messages might be effected, and issued detailed instructions in accordance with which strict censorship of all messages received or sent through the various stations has been exercised. A large number of small private stations have been inspected and dismantled.

ENLISTED PERSONNEL.

During the year the enlisted strength of the Navy has been recruited to its full strength, and many applicants for enlistment have, of necessity, been refused in order to avoid exceeding the number allowed by law. This has permitted the establishment of a policy of very liberal discharge by purchase. While the final approval of such requests has been retained with the bureau, all requests when supported by a substantial reason will receive approval.

GRADED RETIREMENT OF ENLISTED MEN.

In the opinion of the bureau, this subject is worthy of careful consideration.

Under present law enlisted men will be retired upon their own application after 30 years' service.

Experience has shown that only a few men remain long enough to benefit by this law. Its practical operation, therefore, is not as an inducement to retain men in the service, but rather as a reward for men who remain for various reasons of their own.

It is believed that a graded retirement law based on periods of 12, 16, 20, and 24 years would be a great inducement to many desirable men, who would otherwise go into civil life to remain at least long enough to give the country the benefit of their education, training and experience. Those retired, however, should be regarded as a reserve subject to call in time of war, and at intervals for periods of drill on board ship, in order that they might keep in touch with progress in the naval service.

A reserve of such experienced men as a nucleus would be a potent factor in the formation and instruction of a national naval reserve, of which the Navy is very much in need.

DEMANDS UPON THE ENLISTED PERSONNEL.

Unusual demands have been made to commission various ships needed in West Indian, Central American, and Mexican waters. These have happily been met, principally because the quota of enlisted men gained its full strength. The North Atlantic Fleet has been kept nearly up to full complements during the year. During the coming year and a half it is expected that 8 destroyers, 10 submarines, 2 dreadnoughts, and several auxiliaries will be ready for commissioning, calling for a larger number of men. As no extra allowance is provided for these ships, retrenchments will have to be provided in various ways to meet the situation.

The number of apprentice seamen allowed by law being 3,500, it was found at one time when the recruiting was particularly active to be necessary to advance the recruits who had been longest under training to the rating of ordinary seaman to comply with the requirements of the law. At present all stations have been given a fixed complement of apprentice seamen which is not to be exceeded. While very satisfactory reports have been received of the product of the Great Lakes Training Station, it has been found necessary to limit the number there below what could be profitably handled.

TRAINING OF ENLISTED MEN.

The four training stations at Newport, Norfolk, Great Lakes, and San Francisco have been conducted with excellent results. The course has been increased to four months. Heretofore this time had varied from four to as small a number as two months when the demands for the personnel in the fleet made it necessary for an early detachment of the apprentice seamen. The extension and standardizing of the period of training to four months has permitted the establishment of a more regular and systematic course of training, and the addition of a curriculum of educational studies graded to the previous education the apprentice seamen have received, and consistent with the time that can be spared therefor.

The San Francisco Training Station can accommodate only 820 apprentices. This number has been reached on several occasions, and unfortunate crowding resulted. The replacing of the *Intrepid* by the *St. Louis* will relieve the situation to some extent, but with the opening of the Panama Canal increased importance must extend to this only training station and recruit depot on the Pacific coast.

The following table shows the total number of apprentice seamen that were rated ordinary seamen or coal passers and transferred to general service during the fiscal year from the four training stations, and the total number remaining under instruction:

	Rated and transferred to service.		Remain- ing under instruc- tion.
	Ordinary seamen.	Coal passers.	
Newport.....	2,645	669	781
Norfolk.....	1,378	285	813
Great Lakes.....	1,551	149	352
San Francisco.....	1,266	567	230
	6,840	1,670	2,176

SCHOOL FOR ENLISTED MEN.

General Order No. 63, issued by the Secretary of the Navy about the beginning of the calendar year, outlined a comprehensive plan of study and education, both academic and professional, for the enlisted men of the Navy. Systematic school had already, by the Secretary's order, been established at the four training stations; these were successful from the outset and are a manifest help and advantage to all the young men who pass through the stations.

Upon receipt of General Order 63, school and special instruction were immediately begun upon all vessels with such facilities as were at hand or could be improvised. Unavoidable delay in getting suitable academic textbooks and in getting professional books and pamphlets revised and in suitable form prevented the school system from starting off with the smoothness that might have been anticipated, but nevertheless it was successfully begun. In April a very large number of the vessels of the Navy were sent to Mexican waters and it was deemed advisable to suspend school on board, so that the plan was interrupted before it had a chance to be put in full operation. Such reports as have been received indicate the interest of officers and men, and, with some modifications that the brief and partial operation of the plan have suggested, it is anticipated that it can be fully inaugurated again in the autumn with every indication that it will cause a marked improvement in the efficiency of the enlisted personnel by giving them increased knowledge along many lines and opportunities for advancement.

VOCATIONAL TRADE SCHOOLS.

The following trade schools have been maintained under the direction of the bureau:

At Newport: Seaman gunners' class for instruction in torpedoes; yeoman class; cooks' and bakers' classes; class for hospital corpsmen.

At New York: Electrical class for instruction in general electricity; electrical class for instruction in radiotelegraphy.

At Philadelphia: Class for instruction of firemen in oil burning.

At Washington: Seaman gunners' class.

At Norfolk: Artificers' classes for instruction of ship fitters, plumbers, carpenters, blacksmiths, and painters; musicians' class; messman class.

At Charleston, S. C.: Machinists' mates class; coppersmith class.

At Mare Island, Cal.: Electrical class for instruction in general electricity; electrical class for instruction in radiotelegraphy.

At San Francisco: Yeoman class; class for cooks and bakers; musicians' class.

When the Mexican situation developed it became necessary to temporarily discontinue the seaman gunner class at the navy yard, Washington, D. C., and the fuel-oil class at Philadelphia. It will be impracticable to continue these schools until some of the vessels now in commission are placed in reserve.

The other service trade schools have been continued, but the numbers attending them have of late been a little below normal. This is due to the necessity of having to discontinue the enlistment of landsmen for trades. It has also been necessary to discontinue the enlistment of men in the artificer branches, owing to the quota being full, men in other branches being required to preserve the balance between ratings necessary to properly man the ships.

Table showing distribution of enlisted personnel Oct. 15, 1914.

Vessels afloat.....	41, 448
4 training stations, including those undergoing training, instructors, and necessary details.....	3, 105
14 service trade schools, including those under instructions, instructors, and necessary details.....	970
Total.....	4, 075
16 hospitals:	
Hospital attendants.....	365
Patients.....	1, 023
Total.....	1, 388
Recruiting stations:	
25 main stations.....	} 375
79 substations.....	
51 radio stations.....	258
Ships under construction.....	111
Shore duty at navy yards and stations:	
Special details of various ratings.....	35
Hospital Corps men.....	68
Bandsmen.....	271
Seamen branch, artificers, yeomen, and messmen.....	441
Total.....	880
Insular force (natives of island possessions):	
Cavite.....	120
Olongapo.....	120
Guam.....	38
Tutuila (Fita Fita guard).....	78
Total.....	356
General detail, awaiting transfer to cruising ships.....	750
Not available:	
Insane asylums.....	24
Prisoners.....	1, 103
On leave.....	450
Traveling to and from stations.....	750
Awaiting discharge, action of courts, witnesses, etc., and old men.....	425
Total.....	2, 752
Grand total.....	52, 293

NEW SCHEDULE OF PUNISHMENTS.

Important changes have been made in the matter of the punishment of enlisted men. A new schedule of punishments is now in effect based as far as possible on the theory that men guilty of many of the most common offenses should be punished by reduction of pay for varying amounts rather than by total loss of pay or imprisonment, and that men who are guilty of certain offenses which demonstrate their unfitness for the service, but which are not of a nature to render imprisonment essential for the maintenance of discipline, be summarily discharged.

In this way it is hoped to rid the service of men who make a practice of committing the most common offenses occurring in the administration of naval discipline, namely, unauthorized absence in its various forms and drunkenness on shore. It is the intent of the new schedule, however, to make it possible, in the discretion of the commanding officers, to retain promising men for a period of six months on probation, provided the offenses committed do not involve moral turpitude, with a view to discharging them during that time if they are found

unworthy, or restoring them fully to duty at the end of the six months if their conduct is found to warrant.

Provision is also made to avoid the turning at large of enlisted men without any money. Men discharged by court-martial or as undesirable will hereafter have the badges of uniform, such as cap, ribbons, metal devices, rating badges, etc., removed at the time of discharge. It is hoped ultimately to have a supply of civilian clothing to be exchanged for the uniform clothing of men so discharged.

An important change has also been made in the interest of the enlisted men to remit all of the money forfeited by sentence of court-martial if finally honorably discharged, or one-half of the money forfeited if discharged with an ordinary discharge.

With a view to allowing men who are dissatisfied or who have some good reason for desiring their discharge to leave the Navy in an honorable status the conditions under which men might purchase discharge have been made easier. Under the new regulations it is not necessary for the enlisted man to show that conditions have arisen which did not exist at the time of enlistment, as was required under the old order, and the amount of refund has been materially reduced. The man who formerly has to refund the cost of his clothing outfit, \$60, and two or one month's pay of his rating, according to the length of his service, will now have to refund only the value of his clothing outfit plus the cost of transportation to the first place of duty. Provision is also made for the discharge of men serving in other than their first enlistment.

Men who are specially instructed at the service trade schools will not be granted a discharge by purchase during their current enlistment for the reason that they should give adequate return for the extra expense incurred in their behalf.

RECRUITING.

Recruiting during the past fiscal year has been very satisfactory. There was a steady gain in the complement until the quota was reached in May, when it became necessary to suspend enlistments temporarily. Since that time the enlisted force has been recruited practically to its maximum strength. This result was attained without special effort, and with a greatly diminished expenditure for advertising. During the latter months of the year, the advertising was limited to one magazine, which was contracted for by the year. The classified advertisements in the daily papers were altogether discontinued. A limited amount of bill posting was used in the districts where outdoor advertising is especially desirable.

The circular letter system has been conducted without change throughout the year. The supply of illustrated booklets became exhausted during the winter, and a new edition is being prepared.

The only change of consequence in the recruiting stations was the placing on an independent basis of the San Diego office. Previously, recruiting has been conducted in that vicinity under the supervision of the commanding officer of the U. S. S. *Iris*.

The transfer of transportation charges of applicants from the "Recruiting" appropriation to "Transportation, Navigation," which became effective July 1, is in the interest of better accounting, and a saving to the appropriation applicable to the recruiting service.

Occasional instances continue to occur of magistrates who permit wayward youths to go free on suspended sentences with the understanding that they will enlist in the Navy. Such efforts are usually frustrated, due to the publicity given such cases and the policy of requiring applicants to produce evidence of good character. The sentiment of the public toward the Navy has undergone a marked change in recent years, due partly to the extensive advertising policy of the department, and partly to the improvements in the service. It is believed that no difficulty would be experienced in meeting an increased demand upon the recruiting service.

IDENTIFICATION SYSTEM.

During the fiscal year ending June 30, 1914, the bureau detected, through the operations of its finger-print system of personal identification, 602 men who attempted to enlist fraudulently under assumed names. These men had either deserted from the Army, Navy, or Marine Corps or had been discharged for various reasons which would have prevented them from reentering the service under their true names.

By the system the bureau is able to detect all persons with discreditable military service who attempt to enlist in the Navy fraudulently. As soon as a man is enlisted at a recruiting station his finger prints are taken and forwarded immediately to the bureau for comparison with those on file in the identification office. If he has had prior service since January 1, 1907, the date the system was placed in operation, his identity will be established within a few minutes after the receipt of his finger prints.

PENSIONS OF INMATES OF NAVAL HOMES.

Previous to the beginning of the present fiscal year it was necessary for men entering the Naval Home to forfeit their pensions, thereby rendering their families, who had been dependent upon these pensions, destitute and a charge upon charity. This, in a large number of cases, prevented men who had families from accepting the benefits of the Naval Home to which they were by law entitled. In view of this situation and of the fact that men who had seen service in the Army were not required to forfeit their pensions upon entering Soldiers' Homes, the department recommended that legislation be enacted which would place these naval men upon the same basis in regard to receiving their pensions as those of the Army.

During the last session of Congress a law was enacted to make this possible, and now pensions of beneficiaries are not to be credited to the naval pension fund as formerly directed by law, but are to be disposed of in the same manner as pensions for inmates of Soldiers' Homes; that is, any beneficiary of the Naval Home who is receiving a pension of any kind from the Government and who has a child, wife, or parent living shall be entitled to have his pension or any part of it paid to such wife, child, or parent.

GOOD-CONDUCT MEDALS.

The bureau recommended, and the department approved, the discontinuance of the practice which has been in vogue for the last few years, of issuing good-conduct medals to men discharged at the

end of first enlistment. Under this practice the issuance of such medals became so numerous that their value was greatly cheapened, and the men ceased to regard them with the same feeling of pride as was the case when they were awarded only to men who had stood the test of longer periods of service.

HONORABLE-DISCHARGE BUTTONS.

The bureau now has under consideration the adoption of an honorable-discharge button which it recommends for distribution to all honorably discharged men. This button is not in lieu of a good-conduct medal but stands as a visible conveniently displayed sign for what its name indicates, i. e., service in and an honorable discharge from the United States Navy. It could be worn with uniform and with civilian clothes, and though not taking the place of the good-conduct medal it would be more practical toward indicating the honorable service of the wearer than would the medal the display of which is more restricted, particularly for men out of the service.

VICTOR BLUE.

To the SECRETARY OF THE NAVY.

REPORT OF CHIEF OF THE BUREAU OF ORDNANCE.

NAVY DEPARTMENT,
BUREAU OF ORDNANCE,
Washington, D. C., September 23, 1914.

From: Bureau of Ordnance.

To: The Secretary of the Navy.

Subject: Annual report for the fiscal year 1914.

1. The annual report for the fiscal year 1914 is herewith submitted. In pursuance of the departments' policy the bureau has fostered additional competition in the supply of ordnance material, both with a view to widening the source of supply as well as to enable the Government to induce competition as to quality and price. In all respects the efforts have met with success and reports have been made to the department from time to time exemplifying this fact.

2. The first place in the bureau's activities has been given to improving the ordnance material for the service. Such progress as has been made is reported elsewhere.

3. A system has been instituted by which the chief of the bureau is advised of any delay in filling requisitions from ships so that the failure may be corrected and the matter followed up at once. Owing to the unexpected movements of ships the problem of supplying them promptly is not always an easy one. However, a vigorous effort is being made to reduce the delays to a minimum.

GUNS.

4. The manufacture of guns required to arm the *Oklahoma* and *Nevada* has been completed, and the manufacture of guns for the *Pennsylvania* and *Arizona*, and for the destroyers and auxiliaries under construction, has been carried on without interruption by the Washington Navy Yard, the Watervliet Arsenal, the Bethlehem

Steel Co., the Midvale Steel Co., and the American & British Manufacturing Co.

5. The modification and replacement of 6-inch 50-caliber Mark VI guns has been completed, and all vessels have been equipped with 2,800 foot-second guns of the same ballistic qualities.

6. The modification and replacement of 5-inch 50-caliber Mark V guns has proceeded as rapidly as these guns are available, and will be completed within two years. In the modified form these guns are equal in all respects to the latest 5-inch 50-caliber guns.

7. The work of relining eroded guns has progressed most satisfactorily during the year, and about 100 guns of 8-inch caliber or above have been relined, besides numerous guns of lesser caliber.

8. The 5-inch cartridge-case guns of the *Florida* and *Utah* have been replaced by bag guns, and the 5-inch batteries of the *Arkansas* and *Wyoming* will be replaced during the next overhaul period of these vessels. This will give all vessels of the *Utah* class and later date the same type of torpedo-defense gun.

9. Numerous batteries of 3-inch and 4-inch guns have been replaced by later types of guns, and a constant effort has been made to bring all vessels' batteries up to date as far as possible. The installation of salvo latches and improved-type gas ejectors on all guns has progressed, and at the present date nearly all guns are provided with modern outfits.

10. The replacement of all 3 inch rapid-fire gun breech mechanisms with the eccentric plug mechanism has progressed, and the few remaining vessels will be equipped this year, thus completing the replacement of over 400 of these mechanisms.

11. The bureau has begun the assembling of all reserve guns into batteries for issue to auxiliaries in time of hostility, and a number of these guns are now ready for issue. All remaining guns are being assembled into reserve batteries as rapidly as possible.

12. The bureau is still continuing its investigations on the subject of erosion, and systematic collection of data is being made, in addition to minor improvements in type of rifling and shell bands.

13. Three hundred Colt's automatic machine guns have been modified to take the same ammunition as the service rifle. Over 200 Benet Mercie machine guns have been slightly modified to eliminate certain defects in design. The work of modifying both types of machine guns has been progressive in order that guns may be retained for use in service as needed.

14. All vessels in active service have been supplied with Springfield rifles and automatic pistols. The Krag-Jørgensen rifles are being used for the sake of economy in subcaliber attachments.

15. The Model 1910 Army Infantry equipment having been made standard for the Army, Navy, and Marine Corps, the bureau purchased and issued this form of equipment to the ships of the Atlantic Fleet. As soon as the supply of old equipments which were turned in by the fleet has been exhausted the bureau will issue the Model 1910 equipments to other vessels progressively. By this means the discarding of good material will be avoided.

GUN MOUNTS.

16. The contractors for the *Oklahoma* and *Nevada* have received all material furnished by the bureau for the 14-inch mounts of those

vessels. One triple slide and two sets of deck lugs for the *Pennsylvania* have been delivered. Considerable delay has been caused in Government deliveries through rejections of slide castings which have been furnished on private contract. It is expected, however, that the deliveries for the *Pennsylvania* and *Arizona* will be made in adequate time to prevent delay in construction.

17. Arrangements have been made to cross-connect turret elevating gear on all dreadnoughts, including those now building. This work is already authorized.

18. The 14-inch mounts for battleships 40, 41, and 42 will be built at the Washington Navy Yard in toto, except castings for all three ships and complete slides for one ship. These will be obtained on contract.

19. Director control was first tried on the *Delaware*, and while the results were considered indeterminate another trial was made at regular target practice in which the score of that ship could be compared with those of the other competing vessels. A careful study of the scores indicates that the idea possesses value, although not to so great an extent as was claimed by some enthusiasts. In consequence, director installations have been authorized for the *Michigan*, *Wyoming*, *Utah*, *North Dakota*, *South Carolina*, and *New Hampshire*, in addition to the *Delaware*, already installed. It is proposed to extend this authority to the *Arkansas*, *Florida*, *New York*, and *Texas*. If the experiment on the *New Hampshire* proves satisfactory, the installation may be placed on all predreadnoughts as soon as funds are available. These installations are additional, and do not affect the individual handling of the guns.

20. The 5-inch mounts for the *Oklahoma*, *Nevada*, *Bushnell*, and *Melville* have been completed, and those for the *Pennsylvania* are well under way. The 4-inch mounts for destroyers 51 to 56 are well under way and will be ready for the ships as needed. All spare mounts of all broadside types are being assembled at the various navy yards into reserve batteries which will be complete in all respects and ready to be used on auxiliaries in time of need. In order to reduce the expense of the various fittings for electric gun firing and lighting circuits for all guns and mounts, the bureau adopted a standard type of circuit for all vessels. Complete instructions for standardizing these circuits have been issued. This standardization will materially reduce expenditures, as the fittings will be manufactured in bulk and assembled for issue in stock at the Washington Navy Yard.

PROJECTILES.

21. During the past year the specifications used in the purchase of armor-piercing projectiles have been so modified as to make the acceptance conditions more rigid, and it is thought that as a result of this a higher quality of projectiles is obtained. As the result of the encouragement of competition the prices of armor-piercing, common, and target projectiles have been greatly reduced, and the prices of projectiles now being purchased under contracts awarded during the past year are lower than ever before.

22. Preliminary steps have been taken by the bureau toward the acquisition of a foreign system for the manufacture of projectiles, should the efficacy of such a system be demonstrated to the satisfaction of the bureau.

23. The bureau is still more than ever inclined to the opinion that the best possible type of projectiles for the attack of armored vessels is the armor-piercing projectile, carrying sufficient explosive to detonate and fragment the projectile after having passed through armor; and it is thought that the penetrative power of projectiles has been increased to such an extent as to insure a satisfactory percentage of success.

24. Experimental firings have been conducted at the proving ground with projectiles of foreign manufacture and with projectiles of various shapes, in order to ascertain the relative qualities of each. In order to ascertain what progress has been made in the quality of armor-piercing shell there were recently fired at Indianhead armor-piercing shell manufactured in 1903, which at that time were extraordinarily efficient. These shell were fired at the same plate in competition with the highest grade of shell of recent manufacture, and it was found that the shell being produced to-day possess great superiority over those considered the best 11 years ago. Inasmuch as the sole measure of the efficiency of armor is furnished by its test with armor-piercing shell, these experiments are an important witness to a like advance in the quality of the armor now being furnished.

SMOKELESS POWDER.

25. There were manufactured at Indianhead during the past fiscal year 3,352,388 pounds of smokeless powder. Of this amount 2,338,448 pounds were new powder and 1,013,940 pounds were old powder reworked on account of loss of stability or unsuitability of granulation.

26. During the same period deliveries were made by private manufacturers as follows: 1,559,358 pounds from the Carney's Point plant, and 605,535 pounds from the Haskell plant of the E. I. du Pont de Nemours Powder Co., and 1,111,737 pounds from the Parlin plant of the International Smokeless Powder & Chemical Co.

27. It will thus be seen that the proving ground is now manufacturing more than one-half of the powder acquired.

28. Due to the increased output at the Indianhead plant, and to the economies instituted in the consumption of fuel and the saving of solvent, besides a lower cost for purchased mixed acid and alcohol, the cost of powder at Indianhead has been considerably reduced.

29. A new system of nitration is being installed which it is hoped will further reduce the cost, and this reduction will be augmented by a lower price for nitrate of soda than has been quoted for several years past.

30. The experiments in regard to increasing the amount of stabilizer in the powder and experiments in regard to high temperature drying have been completed but definite conclusions can not yet be drawn, as it is necessary to keep these powders stored for a long time before they show signs of deterioration. The bureau has also been experimenting with other methods of quick drying. Experiments are also under way in regard to the form of powder grains.

31. Another year has been added to the history of stabilized smokeless powder and it confirms the good record already obtained with this method of improving the keeping qualities.

32. Experimental charges have been tried, in which the grains are regularly piled in the bag, as was done in the case of brown powder.

The reduction in volume of the assembled charge amounts to 37½ per cent. The advantages presented by such an arrangement are so important as to warrant the bureau in attempting to devise machinery by which charges can be put up in that way. The advantages are greater latitude in the size of the grain; smaller stowage room required in the magazines; stiffer charges more easily handled and loaded; decreased destructive effect on the powder bag; and decreased diameter of the breech plug with consequent decreased length of plug, making it lighter; and finally, slightly decreased length of the gun.

ARMOR.

33. Deliveries of armor have been made during the fiscal year of 1914 as set forth in the subjoined table.

Ships.	Bethlehem Steel Co.	Carnegie Steel Co.	Midvale Steel Co.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Oklahoma.....	542.58	1.07		543.65
Nevada.....	2,226.63	2,908.59		5,135.22
Pennsylvania.....	1,268.24		2,499.06	3,767.30
Arizona.....			1,298.06	1,298.06
Miscellaneous.....	110.00	220.00		330.00
Total.....	4,147.45	3,129.66	3,797.12	11,074.23

34. Contracts for approximately 8,000 tons of armor required for the *Arizona* were let during the year, and about 1,300 tons of this armor has been delivered. There still remains to be delivered a small amount of armor for the *Oklahoma* and *Nevada*; however, it is expected that all of the armor for these two vessels will be delivered prior to October 1, 1914.

35. New conning towers were purchased for the *North Dakota*, *Minnesota*, and *Louisiana*, and contract was placed for furnishing a new conning tower for the Connecticut. Upon the delivery and installation of all these conning towers all battleships subsequent to the *Virginia* class will be supplied with conning towers of the most modern design.

36. The question of the cost of armor has been receiving the department's attention, and in the last naval-appropriation act, approved June 30, 1914, provision was made for the appointment of a committee to investigate and report at the next session of Congress upon the cost of erection of an armor plant, and the cost of armor made by this armor plant.

37. Upon awarding contract for the armor of the *Arizona* the price was lowered \$14 per ton in the case of classes A-1 and A-2 armor, \$25 per ton in the case of class B armor, and \$100 per ton in the case of class C steel armor. All heavy armor is now being made of the K. C. type, and no trouble has been experienced with these plates spalling.

38. A number of experiments have been made with a view to determining the relative value of armor placed at various angles to the line of fire. A number of experimental plates have been fired at with a view to developing a more efficient type of armor. A compound plate was submitted, consisting principally of copper with a layer of steel. The results of the test of this plate showed it to be

inferior to the existing type of armor. One company submitted a manganese armor plate, which gave no promise on test. A cast-steel plate was submitted, but was proved to be without value.

TORPEDOES.

39. The torpedo situation, both as to design and to the numbers on hand, has improved considerably during the past year. The bureau is having conducted at the torpedo station exhaustive experiments, with a view of obtaining a large increase in range and speed with the present design of torpedoes. From the results of experiments conducted so far this summer the range has been increased to a marked degree, and a further advance in range and speed will probably be obtained. An increase in speed to the extent hoped for will establish firmly the torpedo as a battleship weapon, a position for it that was long rendered doubtful by the great increase in effective gun range made possible by modern target shooting. The longer range and speed will also be an improvement to destroyers by enabling these vulnerable vessels to strike blows at a distance which would render their survival much more probable.

40. The number of effective torpedoes on hand has increased during the year by about 355, as follows:

Manufactured at the torpedo station-----	75
Rebuilt at the torpedo station-----	87
Received from contractors-----	233
	395
Lost by vessels of the fleet, about-----	40
	355

The loss of 40 torpedoes per annum, while showing improvement over the experience of previous years, still leaves much to be desired in this respect.

41. In order to increase the output of torpedoes by Government plants, the bureau is increasing the capacity of the torpedo station to 150 torpedoes per year, and by direction of the department has placed an order with the Washington Navy Yard for the manufacture of 100 torpedoes. Since there is but one private torpedo manufacturer in this country, it is considered advisable to be in a position to manufacture a large percentage of torpedoes required in Government plants, and all of them if necessary. This will not only tend toward the decrease of cost of torpedoes to the Government, but should work toward the development of the torpedo by having two Government plants in competition with each other and with domestic manufacturers.

42. The reserve allowance of torpedoes should accumulate quite rapidly from now on, as the bureau has outstanding contracts for about 650 torpedoes undelivered from domestic manufacturers and 390 undelivered by Government plants. The bureau also has appropriations available for the purchase or manufacture of about 550 torpedoes, which will be ordered in the near future.

43. The torpedo situation is developing very satisfactorily with the exception of modern torpedoes for battleships anterior to the *Nevada* and *Oklahoma*, for cruisers of the *Tennessee* class, and for the scouts. At present all these vessels are equipped with a short-

range torpedo which may be considered obsolete for the battle fleet. The bureau has obtained appropriations and is having manufactured 350 long-range torpedoes for these vessels, but to accumulate the necessary allowance and reserve and allow for yearly losses will require appropriations for about 500 more of these torpedoes. This is the most serious part of the torpedo situation, and the bureau will ask for half the amount necessary to purchase them in its annual estimates.

44. The bureau's recommendations, approved by the department, to change the torpedo armament of destroyers 51 to 56 from a short to a long range torpedo, will place those destroyers, already partially completed when the recommendation was made, on an equal footing with the latest design of destroyers. All destroyers subsequent to *No. 50* will be equipped with long-range torpedoes within the next two years.

45. The bureau is of the opinion that the torpedo material has developed much more rapidly than the torpedo personnel. In order to reduce the loss of torpedoes at various torpedo practices which are necessary to develop the personnel, the bureau is endeavoring to perfect a scheme of firing all torpedoes at practice with positive buoyancy and in deep water. This plan looks promising and, if developed, will probably decrease the loss of torpedoes.

TORPEDO NETS AND NET CUTTERS.

46. The torpedo station has developed a satisfactory net cutter which will operate at almost any degree of obliquity with the net, and these net cutters are being manufactured for all long-range destroyer torpedoes and for all torpedoes for the new submarines. The bureau has not yet purchased the torpedo nets for the *Oklahoma* and *Nevada* and subsequent battleships, but has been experimenting with net cutters and with nets with a view to determining, if possible, the kind of net that would be most effective. The possession of a successful net cutter again places in doubt the value of the torpedo net. However, some percentage of failures will occur with almost any device, and it is probable that the best net cutter will have its share. This places the net in somewhat the same position that armor occupies—that it will not invariably keep out all shell, but that it will have a certain percentage of success—and the question arises as to whether the net is worth the sacrifice made for its use. While the value of this torpedo defense would be greatly enhanced by having a double net, the inner net must be carried so close to the skin of the ship as to render it vulnerable to the large explosive charges now used in modern torpedoes.

TORPEDO TRAINING SHIP.

47. The substitution of the *Montana* for the *Montgomery* as a torpedo training ship should prove of vast benefit to the service. Since her assignment to this duty the *Montana* has been fitted out with the latest marks of torpedo tubes and torpedoes so that now we are able not only to thoroughly instruct the personnel before being assigned to torpedo duty but to test all classes of torpedo tubes and torpedoes at the highest rate of speed under which they would be fired in battle. Much will be learned of torpedo defects from trained observers highly

skilled in the use of this weapon, besides which it is the intention of the Bureau of Navigation to send only graduates of this systematic course of instruction as torpedo officers of ships. It is believed that this will increase the torpedo efficiency of the fleet far more than anything else can.

MINES.

48. The mine situation is improving slowly, and the bureau is adding to its stores, by both purchase and manufacture, a considerable number of the anchored contact type. The bureau has manufactured and tested 100 type electric floating mines, which appear very satisfactory. There are also being manufactured 100 type percussion floating mines for test in comparison with the electric mines. All of these mines will be sent to the fleet for practical test afloat. Either kind can be manufactured quickly in large quantities.

FUSES.

49. The bureau has been carrying out a number of experiments throughout the year looking to an improvement of all its fuses, especially the detonating fuse. These experiments promise satisfactory results. The quality and reliability of the night tracer have been greatly improved during the year.

50. Recent experiments with a high-velocity time fuse indicate very promising results. It is too soon, however, to say that we have at last solved the very vexing question of providing an efficient time fuse that will remain efficient throughout a long period of storage. The successful accomplishment of such a result means so much that the bureau is bending every energy to provide this highly essential feature of shrapnel fire.

ALLOWANCE LISTS.

51. Broadside battery allowance lists for all vessels have been prepared by a board ordered for the purpose. Their work consisted principally in reducing the number of accessories furnished with broadside batteries and substituting tools of good commercial manufacture for the more costly ones especially made at the gun factory. It is found that such tools can be purchased from the manufacturers, of good quality and at lower cost, thus affording a ready source of supply. This is, of course, due to the larger numbers produced by commercial firms.

EXPERIMENTS AND DESIGN.

52. The design of the bureau 3-inch submarine gun and mount has been completed. This is a water-tight mount, possessing distinct advantages in compactness and readiness for quick use over any known types of submarine mounts and is a radical departure from known designs. Submarines of the *L* and *M* classes, now under construction, will be armed with this weapon.

53. Designs for 3-inch, 4-inch, and 1-pounder antiaeroplane guns have been completed. The manufacture of an experimental 1-pounder gun has been completed and one 3-inch 50 caliber is nearly so. It is proposed to experiment with these types of guns on kites towed by aeroplanes, in order to obtain data on the most efficient gun for the purpose.

FIRE CONTROL INSTALLATIONS.

54. The development of fire-control instruments has progressed satisfactorily during the past year. Beginning with the *New York* and *Texas* the range finders of 20-foot base and over are mounted in protected positions in the turrets. By means of the range transmitters attached to these instruments, the range is made available in the plotting room the instant it is obtained. This is accomplished by visual means, thus eliminating confusion and mistakes incident to transmitting information over telephone or voice tube.

55. An automatic plotting instrument is being developed which promises to give a means of utilizing the range finders to the best advantage and increases the value of these instruments considerably. Manual plotting has been found too slow and inaccurate for the exact results necessary and time available in action.

56. The target turret system now being installed in the new ships gives a very satisfactory means of directing the fire at the proper targets and checking up all turrets to see that each is on the target assigned.

57. Attention is now being directed toward perfecting the automatic plotting instrument and developing a more satisfactory range clock than the one now in general use in the service.

ADVANCE BASE.

58. Advance-base maneuvers were carried out by the Marine Corps at Culebra Island during the winter of 1914. As a result of these, slight changes in the battery have been recommended. The advance-base outfit, though not as yet complete, has been made very efficient as a result of the past year's expenditures. An increase in the number of main battery guns and the elimination of the 3-inch 50 caliber gun for advance-base purposes have been directed. The number of searchlights provided for fire control was not adequate, and more could not be purchased because of lack of time and funds. It is hoped that sufficient searchlights can be provided during the coming year.

DEFENSES AT GUAM.

59. Until such time as the permanent defense of the island of Guam is completed it was thought advisable for the Navy to install efficient temporary defenses for that island. The bureau, with the cooperation of the Marine Corps, has furnished the material and is installing on a comprehensive scheme an efficient temporary defense in Guam. This work is well under way.

LANDING OPERATIONS AT VERA CRUZ.

60. The operations on shore at Vera Cruz in the month of April made no special demands on the bureau's resources except in the matter of small-arms and field-gun ammunition. Ample provision for this contingency with respect to small-arms ammunition had been made, and a large supply of it, in addition to the fleet's regular allowance, had been provided and was with the fleet. Besides this a large store of small-arms ammunition was ready at Guantanamo. Each ship had on board its allowance of machine guns, and an extra

number were stored at Guantanamo for use in case the commander in chief desired them. The allowance of shrapnel for landing guns has never been such as to contemplate protracted operations on shore. In view, however, of the possibilities of this occurring in the future the bureau has doubled the number of shrapnel per gun provided for each ship.

KEYPORT TORPEDO STATION.

61. The land for the new torpedo station at Keyport, Puget Sound, has finally been turned over to the Government and the construction of a firing wharf and combination storehouse and repair shop for the use of vessels on the west coast begun. After this station is in operation torpedoes in the Pacific can be repaired and ranged at Keyport, thus obviating the necessity of their return to Newport, involving long delay and expense. The machine shop will only be equipped to take care of lesser repairs. It will still be necessary to send a badly wrecked torpedo to the torpedo station at Newport to be rebuilt. The whole scheme should add materially to the torpedo efficiency of the Pacific Fleet, especially submarines and destroyers.

NAVAL GUN FACTORY.

62. The following is a statement of the most important work performed at the gun factory during the year:

Guns, all calibers:

Completed-----	135
Lined-----	179
Converted, rebuilt, and retubed-----	7
Partly completed (including guns in process of manufacture, being relined, rebuilt, or converted)-----	148
Total-----	469

Breech mechanisms:

New mechanisms completed-----	226
Modified-----	103
Total-----	329

Miscellaneous:

New and relined guns on contract, and from Watervliet Arsenal, star-gauged, examined, and put in serviceable condition-----	156
Firing mechanisms completed-----	256
Drill guns completed-----	58
Sights completed and partially completed-----	604
Sights overhauled and repaired, and important parts of sights manufactured-----	1, 160
Gun mounts modified, overhauled, and important parts completed-----	1, 257
Torpedo tubes completed or nearly so-----	48
Three-inch shrapnel-----	8, 725
Powder tanks and powder packing boxes-----	30, 014
Cartridge cases-----	32, 378
Primers-----	74, 050
Castings produced in foundry-----pounds--	3, 819, 711
Forgings-----do--	1, 278, 450
Ammunition boxes and cartridge-case packing boxes-----	7, 002
Number of shipments made-----	2, 146
Total weight of shipments-----pounds--	36, 681, 827

63. Additional facilities have been provided for bench and vise work in the breech-mechanism shop. Facilities for repairing optical

instruments have been increased, and arrangements made for testing telescopes and rangefinders on a platform erected upon the roof of the old museum, just above the optical shop. One 100-inch lathe and two 42-inch gun lathes have been installed in the gun shops. The facilities in the forge shop, pattern shop, sight shop, and west gun-carriage shop have been increased and improved, and other improvements looking toward economy and efficiency have been instituted.

64. The superintendent recommends, and the bureau heartily concurs therein, that some plan be devised by which a cash reward may be given to any civil employee who may work out an improvement or economy in any manufacturing process or who may submit a design for some important improvement in ordnance material or plant machinery. This scheme should follow generally that authorized by act of Congress in 1912 for the Ordnance Department of the War Department. In many private manufacturing establishments some such scheme is in vogue.

65. The old foundry has been dismantled and the new foundry put in operation. The shift from the old foundry to the new was done systematically and practically no time was lost. This portion of the plant is now up to date in all respects and is able to turn out castings of the largest size required for ordnance work in steel, cast iron, and bronze. Some difficulty is experienced in keeping the cost of steel castings down to an acceptable figure, due to the fact that the work at a Government plant must necessarily be more or less fluctuating, and this bears especially heavily on a steel foundry. It is hoped to assign additional work to the yard in the near future of such a nature that its manufacture can be carried on when opportunity presents and thus provide a steady flow of work without delaying the needs of the service.

NAVAL PROVING GROUND.

66. In general the work performed by both the proving ground and the powder factory has been considerably greater than that performed during the previous fiscal year, and consequently greater than any year since the station was started.

67. The following is a summary of the proof work performed during the fiscal year:

Guns	518
Mounts	13
Breech mechanisms	28
Armor plates	128
Projectiles	lots 242
Powder	do 94
Cartridge cases	do 142

68. Much experimental work has been performed, of which 53 items are mentioned in the proving ground report, and many of these experiments are of considerable importance to the service. A system has been devised for measuring under-water pressures due to mine explosions, and an accurate formula determined, which will be of great value. Measurements have been made of the under-water explosive effect of nitrogelatine, guncotton, T. N. T., and explosive D.

69. The dock has been improved and additional swamp land in the valley filled in. A new explosion chamber has been constructed, that will permit of the fragmentation of the largest projectile. The covered butt on the north side of the valley has been improved so as to make it possible to fire explosive shell up to 12 inches caliber at armor plate without much danger to the surrounding territory.

POWDER FACTORY.

70. About 700 tons of ether have been manufactured at a satisfactory cost. Some 2,000 tons of sulphuric acid have been produced at a cost well below the market price. A total of 2,338,448 pounds of new powder was manufactured, and at the same time 1,013,940 pounds of powder was reworked. This shows an increase in powder produced of more than 20 per cent over the figures for last year.

71. Work has been begun on the new project appropriated for in the last naval appropriation bill, with the object in view of increasing the potential capacity of the plant. The new nitrate of soda storehouse has been completed and will store 5,000,000 pounds of soda. A new gravity nitrating house is being constructed and will be put in operation during the new fiscal year.

72. A total of 46 accidents among the force employed at the proving ground has been reported for the year. They are generally of a minor character and none of them serious.

73. In general, the work of the proving ground is being constantly increased and much of the proof work is conducted under great difficulties, due to its limited extent and peculiar geography. The bureau has submitted a recommendation to the department for the purchase of additional land on the left bank of the Potomac below the present reservation. The constantly increasing range of the heaviest guns makes such an addition necessary. The proving ground is particularly hampered in high-explosive shell experiments, and this would be obviated were the additional land provided.

* * * * *

JOSEPH STRAUSS.

REPORT OF THE CHIEF OF THE BUREAU OF CONSTRUCTION AND REPAIR.

NAVY DEPARTMENT,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, D. C., October 10, 1914.

To: The Secretary of the Navy.

Subject: Report of the Bureau of Construction and Repair for the fiscal year ended June 30, 1914.

1. I respectfully submit herewith the report of the bureau for the fiscal year ended June 30, 1914, together with estimates for appropriations required for the fiscal year ending June 30, 1916.

* * * * *

SHIPBUILDING WORK AT NAVY YARDS.

In the last annual report the bureau stated—

There is now a greater value of new shipbuilding work in progress and authorized at navy yards than ever before in the history of the new Navy. It includes the battleship *New York*, also battleship 39 (no name assigned as yet) at the navy yard, New York; and the river gunboats *Monocacy* and *Palos*, also the fuel ships *Kanawha* and *Maumee* at the navy yard, Mare Island. For 18 months, at least, the navy yards at New York and Mare Island—the only yards equipped for expeditious and economical shipbuilding—will be taxed to their maximum capacity in shipbuilding, unless their facilities are increased.

During the past year the Secretary of the Navy authorized new construction work at navy yards which hitherto have not been so engaged. It is therefore pertinent to repeat the statement of one year ago to the effect that there is now a greater value of new shipbuilding work in progress and authorized at navy yards, and a larger number of navy yards so employed in new construction than ever before in the history of the new Navy. It includes the battleship *Arizona*, and will include also one battleship of the *California* class; the fuel ships *Kanawha* and *Maumee*; submarine *L-8*; transport *No. 1*; and supply ship *No. 1*. Full particulars regarding the new work at navy yards during the past year, and the new work authorized are as follows:

Battleship "New York."—The U. S. S. *New York* was completed at the New York Navy Yard, and commissioned April 15, 1914. She left the navy yard on April 26, 1914, and served as flagship of the Special Service Squadron until the squadron was disbanded. Her construction in a navy yard was authorized by the naval appropriation act approved June 24, 1910, and the Secretary of the Navy designated the navy yard, New York, as the place of building.

When estimates of the cost of construction of this battleship were received in the department, it was found that they exceeded the limit of cost imposed by Congress in the naval appropriation act, and in accordance with an opinion of the Attorney General, the Secretary of the Navy suspended all work on the vessel. The Secretary of the Navy reported the fact to Congress and the naval appropriation act of March 4, 1911, contained the following provision:

* * * and the limit of cost, exclusive of armor and armament, of the battleship authorized and directed by the naval appropriation act approved June 24, 1910, to be constructed in one of the navy yards, is hereby increased to \$6,400,000, exclusive of indirect charges.

Upon the passage of the act the work of preparation for building the vessel was immediately resumed.

The naval appropriation act of March 4, 1911, contained also the following provision:

Provided, That no part of any sum herein appropriated shall be expended for the purchase of structural steel, ship plates, armor, armament, or machinery from any persons, firms, or corporations, who have combined or conspired to monopolize the interstate or foreign commerce or trade of the United States, or the commerce or trade between the States and any Territory or the District of Columbia in any of the articles aforesaid, and no purchase of structural steel, ship plates, or machinery shall be made at a price in excess of a reasonable profit above the actual cost of manufacture.

and the placing of contracts for the material of the *New York* was again delayed pending an opinion by the Attorney General as to the steps necessary to insure compliance with the above provision. The

necessary procedure having been determined, contracts for material were placed. By decision of the department the constructional period of 36 months is considered as beginning May 1, 1911.

The keel of this vessel was laid September 11, 1911; she was launched October 30, 1912, commissioned April 15, 1914, and left the navy yard on April 26, 1914, ready for service. She was fully completed within the 36 months constructional period set by the department. The actual cost of construction was materially less than the estimated cost, and the bureau considers the performance of the New York Navy Yard, both as regards time and cost of construction, as excellent.

Battleship "Arizona."—The construction of this vessel is now in progress at the navy yard, New York, N. Y. Her construction was authorized in the naval appropriation act approved March 4, 1913, as follows:

* * * That for the purpose of further increasing the Naval Establishment of the United States the President is hereby authorized to have constructed one first-class battleship, carrying as heavy armor and as powerful armament as any vessel of its class, to have the highest practicable speed and greatest desirable radius of action, and to cost, exclusive of armor and armament, not to exceed \$7,425,000: *Provided*, That the battleship herein authorized shall be built in a Government navy yard.

After consideration of estimates for the construction of this vessel, the department designated the above yard as the place of building. The commandant of that yard accordingly was directed to proceed with the construction of the vessel on June 19, 1913.

By decision of the department the constructional period of 36 months is considered as beginning September 15, 1913, the date of award of contract for the main structural material for the vessel.

The keel of the *Arizona* was laid March 16, 1914; on October 1, 1914, her hull was reported as 33.6 per cent and her machinery as 16.1 per cent completed. Her progress is such as to indicate her completion within the constructional period.

One battleship of "California" class.—The naval appropriation act approved June 30, 1914, reads as follows:

That for the purpose of further increasing the Naval Establishment of the United States the President is hereby authorized to have constructed two first-class battleships carrying as heavy armor and as powerful armament as any vessel of their class, to have the highest practicable speed and greatest desirable radius of action, and to cost, exclusive of armor and armament, not to exceed \$7,800,000 each. One of the battleships hereby authorized shall be built and constructed at a Government navy yard.

The plans and specifications for the *California* class of battleships were issued to the navy yard, New York, and to private shipbuilders, August 1, 1914. The bids were opened at the Navy Department October 6, 1914, and it is anticipated that the order will be given to the navy yard during the month of October to proceed with the construction of the vessel required by the act to be constructed in a Government navy yard.

River gunboat "Monocacy."—The U. S. S. *Monocacy* was authorized by act of Congress of March 4, 1911. Bids were invited for her construction, in the usual manner, and four navy yards were asked to submit estimates. Only one bid was received from a private shipbuilding company and that practically at the limit of cost imposed by Congress. As the estimates received from navy yards were materially less than the one bid received, the Bureau of Construction and Repair

and the Bureau of Steam Engineering jointly recommended to the Department that the construction be undertaken at Mare Island Navy Yard. The Secretary of the Navy ordered Mare Island to proceed with the construction of this vessel on August 13, 1912.

Owing to the difficulty experienced in the delivery of "bullet-proof steel," the progress on the gunboat was not as rapid as was anticipated. Her keel was laid April 28, 1913. On November 20, 1913, packing for shipment was completed. Contract was made with the Shanghai Dock & Engineering Co. for the reerection of this vessel at Shanghai, China. The material of this vessel and stores were shipped by the steamship *Mongolia* and arrived off Woosung, China, January 13, 1914, from whence it was lightered to the shipyard. On February 27, 1914, the keel of the *Monocacy* was relaid at Shanghai, China. The *Monocacy* was launched April 27, 1914. She was gotten under way May 29, 1914, for trials, which were satisfactory, and was commissioned for service June 24, 1914. The total cost of this vessel built at Mare Island Navy Yard, transported to Shanghai, and there reerected by contract, was only two-thirds of the only bid received from a private shipbuilder f. o. b. shipyard above referred to.

River gunboat "Palos."—The naval appropriation act of August 22, 1912, made available for the construction of a river gunboat the appropriation contained in the act of May 4, 1898, for one gunboat to be built on the Great Lakes.

In view of the department's experience in obtaining bids for the construction of the *Monocacy*, the improbability of obtaining bids at the time to the advantage of the Government, the existing demands for river gunboats on the China station, and the time saved in starting the work, the department on August 23, 1912, ordered that this vessel be constructed at the navy yard, Mare Island, simultaneously with the building of the *Monocacy*.

Owing to the difficulty experienced in the delivery of "bullet-proof steel," the progress on the gunboat was not as rapid as was anticipated. Her keel was laid April 28, 1913. On October 30, 1913, packing for shipment was completed. Contract was made with the Shanghai Dock & Engineering Co. for reerection at Shanghai, China, and shipment was made by the steamship *Mongolia*, arriving off Woosung, China, January 13, 1914. The material was lightered to the shipyard, and on February 16, 1914, the keel of the *Palos* was relaid at Shanghai, China. The vessel was launched April 23, 1914. The *Palos* was gotten under way May 27, 1914, for trials, and the work was reported as satisfactory. The total cost of this vessel built at Mare Island Navy Yard, transported to Shanghai and there reerected by contract, was only two-thirds of the bid received from one private shipbuilder f. o. b. shipyard for the *Monocacy*.

Fuel ships "Kanawha" and "Maumee."—These vessels are now under construction at the navy yard, Mare Island, Cal. Their construction was authorized by the naval appropriation act for the fiscal year ending June 30, 1913, and approved August 22, 1912, as follows:

Two fuel ships, to cost, exclusive of armor and armament, not to exceed \$1,140,000 each and which shall be built in navy yards, one to be built in a navy yard on the Pacific coast.

Pursuant to this authorization, plans and specifications for these vessels were prepared by this bureau and the Bureau of Steam Engineering. Preliminary estimates for the construction of one of these

vessels were obtained, after consideration of which the Navy Department approved the recommendation of the bureaus that one vessel be built at the navy yard, Mare Island, and that decision as to the place of building the second vessel be deferred pending the receipt of additional estimates. On January 23, 1913, the commandant of that yard was accordingly instructed to proceed with the construction of the *Kanawha*.

The naval appropriation act for the fiscal year ending June 30, 1914, and approved March 4, 1913, contained under the heading "Bureau of Steam Engineering" the following authorization:

* * * That the unobligated balances under the appropriation "Steam machinery" for the fiscal years ending June 30, 1912, and June 30, 1913, not exceeding \$250,000, are hereby reappropriated and made available for the development of a type of heavy-oil engine suitable for use in one of the fuel ships authorized by the act approved August 22, 1912, and the expenditure thus incurred shall not be a charge against the limit of cost of such vessel.

The Navy Department approved the recommendations of this bureau and the Bureau of Steam Engineering, made after careful consideration of all the estimates received from various navy yards, that the *Maumee* be built at the navy yard, Mare Island, and that the machinery of heavy-oil type be built at the navy yard, New York, and subsequently be shipped to Mare Island for installation on the vessel. This course permitted the preparation of plans, ordering and assembling of material for both vessels to be proceeded with simultaneously with considerable consequent economy. The commandant of the Mare Island Navy Yard was accordingly directed to proceed with the construction of the *Maumee*, except main propelling machinery, on March 24, 1913.

The estimated time for the construction of these vessels is for the *Kanawha* 22 months and for the *Maumee*, in so far as the hull is concerned, 27 months, both dates to begin with the delivery of material. On October 1, 1913, the navy yard reported that the first shipment of structural material was received during the month of September.

The keel of the *Kanawha* was laid December 8, 1913; she was launched July 11, 1914; on October 1, 1914, her hull was reported as 78.9 per cent and her machinery as 70.9 per cent completed.

Following the launch of the *Kanawha*, on July 23, 1914, the keel of the *Maumee* was laid on the same building slip from which the *Kanawha* had been launched. On October 1, 1914, the hull of the *Maumee* was reported as 48.8 per cent and her machinery as 31 per cent completed.

Transport "No. 1."—On February 19, 1914, the Secretary of the Navy directed that transport *No. 1*, authorized by the naval appropriation act of March 4, 1913, be built at the navy yard, Philadelphia. The naval appropriation act of June 30, 1914, contained an appropriation of \$200,000 for "building slip and equipment" for the navy yard, Philadelphia, Pa. Plans have been prepared by the Bureau of Yards and Docks, after conference with this bureau, for the building slip, and ground was broken for the new building ways September 21, 1914. Specifications for the crane equipment for the slip were prepared by this bureau and the Bureau of Yards and Docks, and bids for the same were opened October 3, 1914. The additional shop equipment necessary for this work is being installed, including a complete rearrangement of the shipfitters' shop. The contract for the hull material of this vessel was let on July 16, 1914.

Supply ship "No. 1."—On February 19, 1914, the Secretary of the Navy directed that supply ship *No. 1*, authorized by the naval appropriation act of March 4, 1913, be built at the navy yard, Boston. The naval appropriation act of June 30, 1914, made available an unexpended appropriation of \$148,000, for "building slip and equipment," for the navy yard, Boston, Mass. Plans have been prepared by the Bureau of Yards and Docks, after conference with this bureau, for the building slip, and bids for the construction of the slip will be opened about October 24. Specifications for the crane equipment for the slip were prepared by this bureau and the Bureau of Yards and Docks, and bids for the same were opened October 3, 1914. The contract for the hull material of this vessel was let on July 16, 1914, and the early stages of the work of construction are under way.

Submarine "L-8."—Having received from the Portsmouth Navy Yard a report describing the adaptability and facilities of that yard for the construction of a submarine under cover of the old "Franklin shiphouse," the Secretary of the Navy, on March 16, 1914, assigned the construction of submarine *L-8* to the navy yard, Portsmouth, N. H.

A contract was entered into June 29, 1914, with the Lake Torpedo Boat Co. for the necessary working plans and license for the Navy Department to build one submarine boat.

The mold loft work has been commenced, and contracts for structural material were placed October 3, 1914.

CONSTRUCTION CORPS INCREASE.

A large part of the increased supervisory work resulting from the department's well-defined policy of increasing the amount of new construction at navy yards has fallen upon the Construction Corps of the Navy. At private shipyards undertaking new construction for the Navy, naval officers are stationed to inspect the work turned out, and the shipbuilding companies have a large, skilled, highly paid technical force actively engaged in planning and superintending the work of construction. While the naval constructors on duty at navy yards, in addition to their routine duties of supervising repairs to naval vessels, can care for a certain amount of new construction, in the bureau's opinion it is necessary that yards building vessels as large as supply ship *No. 1* should have at least one and preferably two officers of the Construction Corps whose whole time can be given to supervising the details of the new construction. Unfortunately, with the limited number available in the Construction Corps, and the many other demands made for services of these officers, it is now impossible for the bureau to recommend to the department for detail at the navy yards the number of naval constructors which is considered desirable and which would be provided if there were sufficient officers available.

The limit of the Construction Corps was placed at 75 officers by the naval appropriation act of March 3, 1903, and the necessities for an increase in the corps of naval constructors have been repeatedly represented to the department by the Chief Constructor. In view of the additional supervision resulting from the increased amount of

new construction work at navy yards, the bureau urges for favorable consideration of Congress at this time a limited increase in the number of officers of the Construction Corps. This will not entail any increased appropriation, as it will mean that a limited number of the graduates of the Naval Academy who otherwise would enter the line of the Navy would be assigned hereafter to the special technical work of the Corps of Naval Constructors.

Attention is invited also to the slow promotion in the Construction Corps at the present time. When the number of officers in the Construction Corps was fixed at 40, the number of naval constructors with the rank of captain and with the rank of commander was fixed at 5 in each of these grades. When the total number of officers in the Construction Corps was increased to 75, there was no change made in the number of officers allowed in these grades. At that time several officers in the Construction Corps held rank ahead of their line classmates, and an increase in the authorized number of captains and of commanders was not necessary. At present, however, conditions are such that 10 officers in the Construction Corps, graduates of seven classes of the Naval Academy, have less rank than their classmates in the line. For many years to come the number of constructors thus passed over by their classmates in the line will continue to increase. Had these officers remained in the line of the Navy they would now have the rank of their classmates, and it is only right and equitable that they should not suffer loss of rank and pay (since rank fixes pay) by reason of having selected the Construction Corps. Rank commensurate with length of service must be provided for officers of the Construction Corps if the general contentment and efficiency of this important branch of the commissioned personnel is to be maintained. It is therefore recommended that in connection with the increase in numbers of the Construction Corps there be authorized an increase in the number of captains to 12 and of commanders to 13, with the proviso that no officer of the Construction Corps is to be promoted to the grade of captain or of commander prior to the promotion to these grades of the line officer with whom or next after whom he takes precedence.

EXPERIMENTAL MODEL BASIN AND WIND TUNNEL.

The work of the model basin has been carried on as usual during the past year with great advantage to the bureau. A wind tunnel has been installed which is 8 feet square at the observing chamber and can be used up to an air velocity of 6,000 feet per minute. Preliminary tests and adjustments are about completed, and it is now ready for any experiments within its capacity. It has already been used for special investigations in connection with ventilator cowls with satisfactory results. A number of experiments with models of aeroplane wings and complete aeroplanes have been initiated and the bureau believes that as experimental data accumulates this wind tunnel will be found as useful in the development of air craft as the model basin has shown itself in connection with ships.

VESSELS SURVEYED.

The following vessels have been surveyed and repairs authorized during the past fiscal year:

Name.	Where surveyed.	Date of survey.	Estimated cost of repairs.
Albany.....	Puget Sound.....	Mar. 12, 1914	\$34,462.00
Alice.....	Norfolk.....	Jan. 12, 1914	3,256.00
B-2.....	do.....	July 3, 1913	2,961.16
Brooklyn.....	Philadelphia.....	Aug. 7, 1913	47,974.00
Brutus.....	Charleston, S. C.....	Sept. 2, 1913	13,131.22
Cheyenne.....	Puget Sound.....	Aug. —, 1913	18,962.67
Castine.....	Boston.....	Oct. —, 1913	26,539.00
Des Moines.....	Portsmouth, N. H.....	Sept. 8, 1913	4,016.00
Delaware.....	Norfolk.....	Feb. 4, 1914	35,557.00
Eagle.....	Portsmouth, N. H.....	Sept. 3, 1913	5,017.50
Georgia.....	Boston.....	July —, 1913	75,829.33
Hopkins.....	Mare Island.....	Dec. 9, 1913	1,625.00
Idaho.....	Philadelphia.....	Nov. 25, 1913	11,983.50
Isla de Luzon.....	New York.....	May 7, 1914	7,135.00
Kansas.....	Philadelphia.....	Dec. 1, 1913	12,351.80
Louisiana.....	Norfolk.....	Aug. 28, 1913	17,501.60
Do.....	do.....	Jan. 28, 1914	58,173.00
Lebanon.....	do.....	Apr. 28, 1914	4,022.00
Michigan.....	do.....	July 8, 1913	17,563.78
Do.....	Philadelphia.....	June —, 1914	17,845.00
Montana.....	Portsmouth, N. H.....	Aug. 19, 1913	6,081.72
Minnesota.....	Philadelphia.....	July 11, 1913	48,063.36
Montgomery.....	Portsmouth, N. H.....	Aug. 20, 1913	7,774.60
Milwaukee.....	Puget Sound.....	Aug. 27, 1913	5,171.94
Mars.....	Portsmouth, N. H.....	Sept. 3, 1913	3,734.00
Machias.....	New York.....	May 4, 1914	2,745.50
North Dakota.....	do.....	Aug. 25, 1913	10,756.97
New Orleans.....	Puget Sound.....	do.....	6,222.50
Nanshan.....	Mare Island.....	Sept. 25, 1913	21,243.00
New Jersey.....	Boston.....	Oct. —, 1913	51,125.75
Neptune.....	Norfolk.....	Nov. 18, 1913	25,188.01
New Hampshire.....	do.....	May —, 1914	42,787.00
Nebraska.....	Boston.....	June —, 1914	46,282.61
Petrel.....	Portsmouth, N. H.....	Sept. 4, 1913	3,369.00
Paducah.....	do.....	Sept. 3, 1913	3,517.74
Rhode Island.....	Boston.....	Nov. —, 1913	43,425.53
South Carolina.....	Norfolk.....	Aug. 5, 1913	64,829.00
San Francisco.....	Portsmouth, N. H.....	Aug. 13, 1913	3,443.00
Tonopah.....	Norfolk.....	July 3, 1913	8,611.04
Tennessee.....	Portsmouth, N. H.....	Sept. 3, 1913	5,631.01
Do.....	do.....	Sept. 5, 1913	26,169.00
Uncas.....	Charleston, S. C.....	Sept. 3, 1913	7,480.17
Virginia.....	Boston.....	July 11, 1913	84,859.94
Vermont.....	Norfolk.....	Jan. 13, 1914	16,011.00
Do.....	do.....	May 4, 1914	23,585.72
Wyoming.....	New York.....	Oct. 16, 1913	60,051.00

TECHNICAL AND CLERICAL FORCE.

The bureau is pleased to state that its technical and clerical force has maintained its high standard of efficiency, though considerably hampered by its inability to obtain men with suitable experience to fill vacancies, due to economic and other conditions. Recent promotions, made possible by appropriations and resignations, have improved conditions, but it is believed that the rates of pay are not yet equal to those paid by commercial establishments for the same grades of ability.

The bureau is pleased to acknowledge the faithful and earnest efforts of its employees, who, when they considered it necessary, have voluntarily worked many hours overtime or relinquished portions of their well-earned leave.

INSPECTION OF MATERIAL.

The inspection work under this bureau has materially increased in the last year, without corresponding permanent increase in the classified force, and, in the bureau's opinion, without loss in the quality of inspection. In addition to the inspection of a greater amount of structural steel than has ever been handled in any previous year, the eastern district preliminarily inspected the major portion of the machines for the hull division shops at the naval station, Pearl Harbor; the total of the contracts was about \$200,000.

Illustrating the increased amount of inspection work accomplished in the different classes of material, the bureau gives the following table of amounts of steel inspection for the years 1911, 1912, 1913, and 1914, and the corresponding costs of clerks and inspectors, less travel expense. The total travel expense chargeable to appropriation "Pay, miscellaneous," has been computed for the year 1914, and inserted in the table. Attention is invited to the low total cost of the inspection of steel materials for the fiscal year of 1914, on a per-ton basis, namely, 42.7 cents.

Fiscal year.	Steel material inspected.	Cost of inspection chargeable to appropriation "Construction and repair" (salaries, etc.).	Travel expense chargeable to appropriation "Pay, miscellaneous."
	<i>Pounds.</i>		
1911.....	77,504,702	\$25,275.04	.....
1912.....	121,920,658	26,944.16	.....
1913.....	105,614,565	27,295.52	.....
1914.....	159,403,349	28,003.36	\$2,383.51

NOTE.—1914, cost of inspection, including salaries, travel expense, etc., per ton of steel material inspected, 42.7 cents.

It must be borne in mind that the steel inspection, particularly for the eastern district, is only a part of the total material inspected; for example, factory or mill inspection is also made on hose, copper materials, galley equipment, life jackets, belting, tubing, rubber materials, machinery, machine tools, toilet paper, toilet articles, chain, cork material, coaling baskets, wire mesh articles, storage batteries and electrical material, glass, shellac, brushes, paint, etc., wire and rope, pipe, metallic tubing, linoleum, and other miscellaneous supplies.

Mill inspection is particularly valuable to the bureau, not only in the assurance that the quality of material contracted for is actually obtained, but by the opportunity presented of having its inspectors at the large mills and places of manufacture constantly in touch with any improvements that are made in the quality of materials or in the various types and classes of machine tools, processes, etc., employed in production.

The bureau also desires to point out the increased competition in purchases under the bureau, due, first, to efforts of the inspectors and their assistants to interest reputable manufacturers who had not heretofore entered into contracts with the Navy Department; second, to obtaining by first-hand discussion the views and criticisms of the

manufacturers relative to Navy specifications, and the resultant elimination of any unnecessary refinements present in the department's specifications.

The bureau also invites the department's attention to the very considerable saving in the expenditures by the Navy Department for material and transportation thereof, which has resulted from the inspection and acceptance of West coast shipments f. o. b. at mills in the East, particularly structural steel material in and around Pittsburgh and Philadelphia. Shipments are being made of this material on Government bills of lading and material reductions in the transportation costs are being obtained by shipment over land-grant railroads, these reductions in many cases amounting to as much as 50 and 100 per cent of the regular tariff. Competition among the railroads for the transportation of these materials has been secured, and when large quantities are to be transported, as, for example, structural steel material required for the *Kanawha* and *Maumee*, still lower rates are obtained by securing competitive bids from the various railroads. The burden of the correspondence, opening of bids, and award of contract has been handled for the Bureau of Supplies and Accounts by the inspectors under this bureau and their assistants, without increase in their force.

As an example of the saving to the department effected by this phase alone of mill inspection, the bureau invites attention to the purchase of steel material required for the construction of the *Kanawha* and *Maumee* at the Mare Island Navy Yard; about 15,000,000 pounds of structural steel were shipped from eastern mills to Mare Island, and the saving in the transportation cost by the use of land-grant railroads on these contracts alone was \$20,000. This, it will be noted, is about 67 per cent of the total amount of the salaries of the inspectors and clerks of the eastern and western districts, and their total traveling expense for the last fiscal year. As all West coast material is purchased f. o. b. mills whenever practicable, the saving to the Government throughout the year is obvious.

On account of the increase in pay granted a number of the inspectors and clerks of the inspection staff by the department in the fiscal years of 1914 and 1915, the condition of the bureau's inspection staff is better than it was, but a further reasonable increase in pay and an increase in their number is desirable to meet the increasing volume of business handled, to meet the increased cost of living, to reward merit and diligent services; to avoid the delays and interferences in inspections resulting from a shortage of inspectors, and to prevent highly trained and experienced men leaving the Government service on account of greater pecuniary reward offered by private employment. The bureau has been required during the last year to fill the place of the senior assistant inspector of hull material for the western district owing to the resignation of the then incumbent, a man of considerable experience and training in the inspection of steel material. This inspector accepted a more remunerative position with one of the steel companies.

The bureau feels that the very satisfactory showing made by its inspection force would not have been made had it not been for the faithful and earnest efforts of its employees, and for the many hours of voluntary overtime devoted to their work.

Summary of work performed by steel inspectors under the Bureau of Construction and Repair for the eastern and western districts during the fiscal year ended June 30, 1914.

	Eastern district.	Western district.	Total.
Total amount of material rolled and inspected.....pounds..	56,665,440	102,737,909	159,403,349
Amount rejected for physical tests.....do.....	5,571,656	5,351,883	10,923,539
Percentage rejected for physical tests.....	9.83	5.21	6.85
Amount rejected for chemical tests.....pounds..	543,659	25,160	568,819
Percentage rejected for chemical tests.....	.96	.02	.36
Amount rejected for surface defects.....pounds..	968,148	16,982,834	17,950,982
Percentage rejected for surface defects.....	1.71	16.53	11.27
Amount rejected for all causes.....pounds..	7,083,463	22,359,877	29,443,340
Percentage rejected for all causes.....	12.50	21.76	18.48
Scrap.....pounds..	15,463,827	9,297,230	24,761,057
Total amount of material accepted and shipped.....do.....	34,118,150	71,080,802	105,198,952

* * * * *

ADDITIONS TO THE NAVY SINCE JUNE 30, 1913.

The additions to the effective force of the Navy by the completion of vessels building under contract and at navy yards are as follows: Battleships *Texas*, *New York*; torpedo-boat destroyers *Cassin*, *Duncan*, *Cummings*, *Aylwin*, *Benham*, *Parker*, *Balch*, *McDougal*; submarine torpedo boats *H-1*, *H-2*, *H-3*, *K-1*, *K-2*, *K-5*, *K-6*; *G-4*,¹ fuel ships *Proteus*, *Nereus*; gunboats *Monocacy*, *Palos*, *Sacramento*.

TRIAL AND ACCEPTANCE DATA.

Statement of data relative to trials of vessels which have been preliminarily but not finally accepted since June 30, 1913.

Name.	Type.	Date of trial.	Speed required by contract.	Speed obtained on trial.	Date of preliminary acceptance.	By whom built.
<i>Texas</i>	Battleship....	Oct. 28, 1913	<i>Knots.</i> 21.0	<i>Knots.</i> 21.05	Mar. 12, 1914	Newport News Shipbuilding Co.
<i>New York</i>	do.....		21.0		² Apr. 15, 1914	Government.
<i>Sacramento</i>	Gunboat.....	Mar. 31, 1914	12.5	12.78	Apr. 26, 1914	Wm. Cramp & Sons.
<i>Monocacy</i>	do.....		13.25		² June 24, 1914	Government.
<i>Palos</i>	do.....		13.25		do. ¹	Do.
<i>Duncan</i>	Destroyer.....	July 5, 1913	29.0	29.14	Aug. 30, 1913	Fore River Shipbuilding Co.
<i>Aylwin</i>	do.....	Oct. 16, 1913	29.5	29.60	Jan. 17, 1914	Wm. Cramp & Sons.
<i>Parker</i>	do.....	Nov. 19, 1913	29.5	29.55	Dec. 29, 1913	Do.
<i>Benham</i>	do.....	Dec. 17, 1913	29.5	29.59	Jan. 20, 1914	Do.
<i>Balch</i>	do.....	Feb. 26, 1914	29.5	29.62	Mar. 26, 1914	Do.
<i>McDougal</i>	do.....	May 14, 1914	29.0	30.70	June 16, 1914	Bath Iron Works.
<i>H-1</i>	Submarine.....	Aug. 11, 1913				
		Sept. 16, 1913			Nov. 29, 1913	Union Iron Works.
<i>H-2</i>	do.....	Aug. 13, 1913			do.....	Do.
		Sept. 17, 1913				
<i>H-3</i>	do.....	Oct. 24, 1913				
		Nov. 18, 1913			Jan. 16, 1914	The Moran Co.
<i>K-1</i>	do.....	Dec. 1, 1913				
		Dec. 10, 1913			Mar. 17, 1914	Fore River Shipbuilding Co.
<i>K-2</i>	do.....	Dec. 2, 1913				
		Dec. 6, 1913			Jan. 30, 1914	Do.
<i>K-5</i>	do.....	May 27, 1914				
		June 6, 1914			Aug. 20, 1914	Do.
<i>Nereus</i>	Fuel ship.....	Sept. 3-4, 1913	14.0	14.58	Sept. 10, 1913	Newport News Shipbuilding Co.

¹ Conditionally delivered.

² Date of commission.

Statement of data relative to trials of vessels which have been finally accepted since June 30, 1913.

Name.	Type.	Date of trial.	Speed re-quired by contract.	Speed obtained on trial.	Date of preliminary acceptance.	Date of final acceptance.	By whom built.
Jarvis...	Destroyer.	Sept. 18, 1912...	29.5	30.01	Oct. 21, 1912	Dec. 11, 1913	New York Shipbuilding Co.
Henley...	do.	Sept. 24, 1912...	29.5	30.32	Dec. 5, 1912	June 15, 1914	Fore River Shipbuilding Co.
Beale...	do.	June 25, 1912...	29.5	29.65	Aug. 29, 1912	Oct. 15, 1913	Wm. Cramp & Sons.
Cassin...	do.	June 26, 1913...	29.0	30.14	Aug. 8, 1913	June 4, 1914	Bath Iron Works.
Cummings...	do.	Aug. 27, 1913...	29.0	30.57	Sept. 19, 1913	Oct. 17, 1914	Do.
E-2...	Submarine	Nov. 14 to 23, 1911.			Feb. 14, 1912	July 19, 1913	Fore River Shipbuilding Co.
F-4...	do.	Mar. 31 to Apr. 22, 1913.			May 2, 1913	June 10, 1914	The Moran Co.
G-1...	do.	Sept. 3, 1912...			Oct. 28, 1912	Oct. 24, 1913	Newport News Shipbuilding Co.
Proteus...	Fuel ship.	June 27, 1913...	14.0	14.67	July 5, 1913	Aug. 4, 1914	Do.
Orion...	do.	July 10 to 12, 1912.	14.0	14.47	July 24, 1912	Jan. 26, 1914	Maryland Steel Co.

Statement of data relative to trials of vessels which have been preliminarily accepted previous to June 30, 1913, but not finally accepted June 30, 1914.

Name.	Type.	Date of trial.	Speed re-quired by contract.	Speed obtained on trial.	Date of preliminary acceptance.	By whom built.
Arkansas.....	Battleship..	June 4, 1912....	20.5	21.05	Sept. 14, 1912	New York Shipbuilding Co.
Wyoming.....	do.	July 19 to 22, 1912	20.5	21.22	Sept. 23, 1912	Wm. Cramp & Sons.
Nebraska.....	do.	July 17, 1906....	19.0	19.06	May 31, 1907	Moran Bros. Co.
Jason.....	Fuel ship..	June 18, 1913....	14.0	14.32	June 26, 1913	Maryland Steel Co.
Sonoma.....	Tug.....	Aug. 12 to 17, 1912.	14.0	13.08	Sept. 5, 1912	New York Shipbuilding Co.
Ontario.....	do.	do.	14.0	13.23	Sept. 3, 1912	Do.

Vessels dropped from the Navy since June 30, 1913.

Name.	Type.	Stricken from the Navy Register.
Alexander.....	Fuel ship.....	Aug. 16, 1913
Independence.....	Unserviceable.....	Sept. 3, 1913
Restless.....	Yacht.....	Sept. 5, 1913
Davis.....	Torpedo boat.....	Nov. 12, 1913
Craven.....	do.	Nov. 15, 1913
Stockton.....	do.	Do.
Wilkes.....	do.	Do.
Stringham.....	do.	Nov. 2, 1913
Manly.....	do.	Apr. 26, 1914
Gwin.....	do.	Apr. 20, 1914
Panay.....	Gunboat.....	June 19, 1914
Omaha.....	Unserviceable.....	July 10, 1914
Mississippi ¹	Battleship.....	July 21, 1914
Idaho ¹	do.	July 30, 1914

¹ Mississippi and Idaho sold in accordance with the provision contained in the naval act approved June 30, 1914.

Vessels building for the increase of the Navy are listed in the following tables, which include all those authorized by law, with the exception of three battleships, six destroyers, and eight or more submarines appropriated for by the last Congress.

Vessels building under contract.

Name.	By whom building.	Estimate of—		Contract time.	Expiration of contract time.
		Degree of completion Oct. 1, 1914.	Probable date of completion.		
BATTLESHIPS.		<i>Per cent.</i>		<i>Months.</i>	
Nevada.....	Fore River Shipbuilding Co...	75.8	Dec. 4, 1915	36	Jan. 22, 1915
Oklahoma.....	New York Shipbuilding Co...	76.3	Sept. 22, 1915	36	Do.
Pennsylvania.....	Newport News Shipbuilding Co.	51.6	June 4, 1916	36	Feb. 28, 1916
TORPEDO-BOAT DESTROYERS.					
Downes.....	New York Shipbuilding Co...	95.3	Nov. 14, 1914	24	Sept. 8, 1913
O'Brien.....	Wm. Cramp & Sons.....	85.2	Feb. 10, 1915	23	Nov. 7, 1914
Nicholson.....	do.....	84.2	Feb. 22, 1915	23½	Nov. 22, 1914
Winslow.....	do.....	79.3	Apr. 28, 1915	24	Dec. 7, 1914
Cushing.....	Fore River Shipbuilding Co...	68.1	June 8, 1915	24	Dec. 11, 1914
Ericsson.....	New York Shipbuilding Co...	85.3	Apr. 4, 1915	24	Dec. 16, 1914
Tucker.....	Fore River Shipbuilding Co...	16.0	Feb. 28, 1916	24	Sept. 22, 1915
Conyngham.....	Wm. Cramp & Sons.....	28.7	Dec. 2, 1915	23½	Sept. 17, 1915
Porter.....	do.....	15.0	Feb. 26, 1916	24	Oct. 2, 1915
Wadsworth.....	Bath Iron Works.....	62.2	July 3, 1915	24	Oct. 15, 1915
Jacob Jones.....	New York Shipbuilding Co...	28.6	Nov. 15, 1915	24	Do.
Wainwright.....	do.....	28.1	Nov. 18, 1915	24	Do.
SUBMARINE TORPEDO BOATS.					
G-4 ¹	Wm. Cramp & Sons.....	96.4		30	Oct. 24, 1911
G-2 ²	Newport News Shipbuilding Co.	89.7		28	Aug. 21, 1911
G-3 ²	Lake Torpedo Boat Co.....	83.0		20	Sept. 19, 1912
K-3.....	Union Iron Works.....	99.7	Sept. 3, 1914	26	July 30, 1913
K-4.....	The Moran Co.....	99.7	Oct. 3, 1914	27	Aug. 30, 1913
K-7.....	Union Iron Works.....	98.1	Nov. 27, 1914	26	Dec. 27, 1913
K-8.....	do.....	98.1	do.....	27	Jan. 27, 1914
L-1.....	Fore River Shipbuilding Co...	61.7	July 4, 1915	22	Dec. 1, 1914
L-2.....	do.....	58.8	July 28, 1915	23	Jan. 1, 1915
L-3.....	do.....	58.3	Aug. 13, 1915	24	Feb. 1, 1915
L-4.....	do.....	57.3	Sept. 1, 1915	25	Mar. 1, 1915
L-5.....	Lake Torpedo Boat Co.....	37.5	Jan. 27, 1916	24	Apr. 24, 1916
L-6.....	Craig Shipbuilding Co.....	38.1	Dec. 27, 1915	24	Do.
L-7.....	do.....	36.4	Jan. 9, 1916	24	Do.
L-9.....	Fore River Shipbuilding Co...	20.0	Mar. 14, 1916	24	Mar. 14, 1916
L-10.....	do.....	19.3	Apr. 14, 1916	25	Apr. 14, 1916
L-11.....	do.....	4.1	Sept. 29, 1916	26	Sept. 29, 1916
M-1.....	do.....	44.8	Nov. 22, 1915	26	Apr. 1, 1915
DESTROYER TENDER.					
Melville.....	New York Shipbuilding Co...	65.5	June 5, 1915	24	June 20, 1915
SUBMARINE TENDERS.					
Fulton.....	New London Ship & Engine Co.	94.0	Jan. 10, 1915	24	June 19, 1914
Bushnell.....	Seattle Construction Co.....	63.0	Aug. 6, 1915	21	Mar. 30, 1915

¹ Conditionally delivered.² Contracts forfeited, vessels being completed at navy yard, New York, N. Y.

Vessels building at navy yards.

Name.	Where building.	Estimate of—		Con- struc- tional period.	Expiration of construc- tional period.
		Degree of com- pletion Oct. 1, 1914.	Probable date of com- pletion.		
BATTLESHIP.					
Arizona.....	Navy yard, New York, N. Y.	<i>Per cent.</i> 33.6	Sept. 15, 1916	<i>Months.</i> 36	Sept. 15, 1916
AUXILIARIES.					
Kanawha.....	Navy yard, Mare Island, Cal.	78.9	Aug. 1, 1915	22	Aug. 1, 1915
Maumee.....	do.	48.8	Jan. 1, 1916	27	Jan. 1, 1916
Transport No. 1.....	Navy yard, Philadelphia, Pa.	1.3			
Supply Ship No. 1.....	Navy yard, Boston, Mass.	0.0			
SUBMARINE.					
L-8.....	Navy yard, Portsmouth, N. H.	0.0		24	

VESSELS LAUNCHED SINCE JUNE 30, 1913.

The following is a list of vessels launched since June 30, 1913, together with the date of launching:

Name.	Launched.	Name.	Launched.
H-3.....	July 3, 1913	McDougal.....	Apr. 22, 1914
Cummings.....	Aug. 6, 1913	Palos.....	Apr. 23, 1914
K-1.....	Sept. 3, 1913	Monocacy.....	Apr. 27, 1914
K-2.....	Oct. 4, 1913	Fulton.....	June 6, 1914
Downes.....	Nov. 8, 1913	K-7.....	June 20, 1914
G-3.....	Dec. 27, 1913	K-8.....	July 11, 1914
Sacramento.....	Feb. 21, 1914	Nevada.....	Do.
K-3.....	Mar. 14, 1914	Kanawha.....	Do.
K-5.....	Mar. 17, 1914	O'Brien.....	July 20, 1914
Oklahoma.....	Mar. 23, 1914	Nicholson.....	Aug. 19, 1914
K-4.....	Mar. 19, 1914	Ericsson.....	Aug. 22, 1914
K-6.....	Mar. 26, 1914		

NEW VESSELS AUTHORIZED.

BATTLESHIPS.

The plans and specifications for first-class battleships *No. 40 (California)*, *No. 41 (Mississippi)*, and *No. 42 (Idaho)*, authorized by act of Congress approved June 30, 1914, were completed and circular signed by the Secretary of the Navy, July 24, 1914, and issued to the bidders upon request after August 1, 1914.

The general dimensions and features of these vessels are as follows:

Length on designer's water line.....	600 feet.
Length over all.....	624 feet.
Breadth, extreme, to outside of plating.....	97 feet 2½ inches.
Breadth, extreme, to outside of armor.....	97 feet 4½ inches.
Mean trial displacement.....	32,000 tons.
Mean draft to bottom of keel at trial displacement (about).....	30 feet.
Full supply of fuel oil.....	2,200 tons.
Maximum stowage of fuel oil.....	3,271 tons.
Fuel oil carried on trial.....	1,467 tons.

Feed water carried on trial..... 209 tons.
 Speed on trial, not less than..... 21 knots.
 Armament:
 Main battery—
 Twelve 14-inch 50-caliber breech-loading rifles.
 Four submerged torpedo tubes.
 Secondary battery—
 Twenty-two 5-inch 51-caliber rapid-fire guns.
 Four 3-pounder saluting guns.
 Two 1-pounder guns for boats.
 One 3-inch fieldpiece.
 Two 30-caliber machine guns,

Bids for the construction of two of these vessels to be built by contract were opened at the department, October 6, 1914.

Proposals received for the construction of two battleships of Group Nos. 40-42—California, Mississippi, and Idaho.

[Class 1: Hull and turbine propelling machinery in accordance with the department's plans. Class 2 Hull and equipment in accordance with the department's plans; machinery, bidder's design.]

Bidder.	Class 1.	Class 2.	Time.	Speed.	Type of propelling machinery.
			<i>Months.</i>	<i>Knots.</i>	
Fore River Shipbuilding Corporation.....		\$7,440,000	36	21	Curtis turbines and reduction gears with cast-steel drums; 4 shafts.
Do.....		7,540,000	36	21	Same with forged-steel drums.
New York Shipbuilding Co..... ¹	\$7,250,000		36	21	Department's plans of turbine-propelling machinery and boilers; 4 shafts.
Do.....		7,350,000	36	21	Curtis turbines with geared cruising turbines; 4 shafts.
Do.....		7,175,000	36	21	Parsons all-geared turbines; 4 shafts.
Newport News Shipbuilding & Dry Dock Co.....	7,195,000		36	21	Department's plan of turbine-propelling machinery and boilers; 4 shafts.
Do.....		7,150,000	36	21	Curtis turbines; 4 shafts.
Do.....		*7,115,000	36	21	Do.
Wm. Cramp & Sons S. & E. B. Co..	7,625,000		36	21	Department's plan of turbine-propelling machinery and boilers; 4 shafts.

¹ Contract awarded.

NOTE.—All bids are for 1 vessel only.

* * * * *

Respectfully,

R. M. WATT,
Chief Constructor, United States Navy,
Chief of Bureau.

The SECRETARY OF THE NAVY.

REPORT OF THE CHIEF OF THE BUREAU OF STEAM ENGINEERING.

NAVY DEPARTMENT,
 BUREAU OF STEAM ENGINEERING,
 Washington, D. C., September 26, 1914.

* * * * *

The general operations of the bureau have, as usual, been centered chiefly in the maintenance in efficient condition of the machinery of the fleet, in the designing of machinery for new vessels, and in the improvement and extension of the radio service.

The conversion of the *Vestal* into a repair ship was completed, and her assignment to the Atlantic Fleet has demonstrated the wisdom of having with the fleet a vessel capable of undertaking the major repair work for which the *Vestal* is equipped. The commander in chief has given testimony of her worth during the protracted stay of the fleet in Mexican waters, where many repairs were accomplished which but for the presence of the *Vestal* might have necessitated the return of a vessel to a navy yard. The work of conversion of the *Prometheus* is nearly completed, but it is a matter of regret that, owing to a decision of the department regarding the cost of her conversion, she will not be as well equipped for work as is the *Vestal*.

The final trials of the *Jupiter*, equipped with electrically operated machinery, were completed in August of this year with satisfactory results. Owing to the necessity for her presence in Mexican waters, it has not been possible to subject her to as much work as was contemplated, but it is a pleasure to report that the machinery has thus far responded to every demand that has been made upon it. The work that has been laid out for her should be the means of bringing to light any weakness that may exist in the installation.

Owing to delay on the part of the contractor for the machinery, the new installation of turbine reduction gear machinery in the *Neptune* has not been completed, and there has, therefore, not been any progress in this direction. The machinery is now being installed and she should be in active service again in November.

DESIGN OF MACHINERY.

Plans and specifications were prepared for the machinery of torpedo boat destroyers Nos. 57 to 62, inclusive, for transport No. 1, for supply ship No. 1, and for the colliers *Achilles* and *Ulysses* for the Panama Canal Commission, and specifications for submarine boats Nos. 48 to 51, inclusive (2 sets). Preliminary work was also undertaken on the machinery for battleships Nos. 40, 41, and 42, the *California*, *Idaho*, and *Mississippi*.

Complete working plans of the main engines and their auxiliaries were also prepared for transport No. 1 and supply ship No. 1 and supplied to the navy yards Philadelphia and Boston, respectively. Considerable work has also been done on machinery for small craft, such as oil barges, ash barges, freight lighters, and small craft generally, besides the usual routine work.

NEW CONSTRUCTION.

The machinery of the *New York* was completed at the New York Navy Yard and the vessel is with the fleet. Her completion emphasized the fact that machinery of this character can be quickly constructed at the New York Navy Yard at a cost somewhat less than it can be procured by contract, and that the workmanship is unexcelled.

Mare Island Navy Yard completed the machinery of the river gunboats *Monocacy* and *Palos* well within the estimate, and these vessels are now in service. The final cost of each was little more than two-thirds the amount bid for the construction of one of them by a firm on the Pacific coast, and indicates a high state of efficiency at the Mare Island yard. The Mare Island yard is also building the machinery for the fuel ship *Kanawha*, which is nearing completion.

Work on the Diesel engines of the *Maumee* is proceeding at the New York yard, and it is expected that tests of it will begin early next year.

Other new work is the construction of machinery for fuel oil barges at Norfolk, Mare Island, and Puget Sound, and a freight lighter and a submarine boat at Portsmouth, N. H.

The manufacture of gasoline engines has been continued at Norfolk with most satisfactory results both as to cost and efficiency of operation.

ELECTRICAL WORK.

The work of the electrical division of the bureau has been devoted chiefly to routine work and to the preparation of type plans for new construction and to the revision of plans submitted by contractors. The work of this division along development lines has been hampered by lack of sufficient drafting force.

Improvements have been made in lighting fixtures and in search-lights of vessels in commission as they go to navy yards for overhaul. Investigation has also been made looking to increased efficiency in this important part of the ship's equipment.

In co-operation with the Atlantic Fleet, several changes in visual signaling apparatus have been developed and adopted which greatly increase the efficiency of this method of signaling, while experiments in underwater signaling recently undertaken have pointed the way to marked efficiency in this line which when fully developed will go far toward relieving the radio apparatus of signaling in the fleet.

The storage-battery equipment of submarines has been much improved and changes made which greatly reduce the probability of explosions in these boats.

RADIOTELEGRAPHY.

Satisfactory progress has been made in the work of modernizing the radio installations of ships. Since the introduction of high frequency and quenched gaps, which rendered all former equipment obsolete, this work has formed the largest single item of expense and effort in connection with radio, though other work of technical investigation and development in connection with the military problems of radio has a greater intrinsic importance. The replacement of the old low-frequency equipment would have been necessitated by reasons of comparative efficiency alone, for recent laws governing commercial installations embody provisions that can hardly be complied with except by modern apparatus. With the old material removed from ships equipped with modern apparatus, it has been possible to equip 10 ships which were without radio and to improve several other installations.

The bureau's new specifications for radio material were issued in January, 1913, and the first deliveries under them were made during the past fiscal year. These specifications were much more exacting than the old ones; in several particulars requirements were made that seemed almost impossibilities, considering the state of the art and from time to time since then, as purchases of apparatus have been made, additional requirements have been added. The full

value of this action has become increasingly impressive as the apparatus has been put into service. In this connection it is interesting to note the decrease in cost of radio apparatus. The sets now supplied represent an increase in manufacturing cost and in material supplied of about 40 per cent over the sets purchased under the old specifications, in addition to very notable improvement in efficiency and design, but the purchase prices have shown no advance, and in some cases there has even been a decrease. Against this favorable condition is to be weighed the disadvantage of having in service a multiplicity of types of apparatus made by various manufacturers, which condition not only adds to the expense of maintenance on account of the larger stock of spares it is necessary to carry but also constitutes a serious military weakness. Standardization of radio apparatus is highly important and apparently it is to be accomplished only by Government manufacture.

The use of radio to the limit of its apparent possibilities for military purposes involves technical problems of a difficult order. These problems do not occur in commercial practice, and so long as the Navy depends upon the work of commercial expert investigators these problems will remain unsolved; or, at best, the Navy will remain in the rear of development as established by the practice of other military powers. The obstacle in the way of progress lies in the lack of specialized expert personnel for the necessary development work. Happily this is now in a fair way of being overcome.

Improvement in shore-station installations has kept progress with that of the fleet. Seven stations were equipped with modern apparatus, and many items for extensive betterments in efficiency were carried out at moderate cost throughout the whole chain of stations. The original wooden masts installed at all stations are now approaching the end of their natural life, and as they wear out are being replaced by self-supporting steel towers. An improvement that should go hand in hand with new towers is the provision of fireproof power and operating buildings. The fire hazard is considerable at all radio stations, and especially where oil engines are depended upon for primary power supply. Almost all the stations as originally erected consisted of frame buildings, many of them in isolated positions without other fire protection than that afforded by patent extinguishers in the hands of the station crews.

The stations at Colon and Balboa, at the terminals of the canal, are undergoing complete reconstruction. These stations will handle all the commercial radio communication in connection with the operation of the canal, and no pains have been spared within the bureau's means to provide adequate equipment and a creditable service in keeping with the other parts of this work. These stations will be ready for operation by the end of the calendar year. Their present equipment is adequate for the traffic that must be handled meanwhile.

The construction of the high-powered radio station on the Isthmus has been delayed by delinquency of the contractor for the towers. The buildings, constructed by the Panama Canal Commission, are ready for occupancy, and the electrical equipment was ready for shipment before completion of the contract time. The work is now proceeding more satisfactorily, and the indications are that the

station will be in full operation by the end of the calendar year. Proposals for the other high-powered stations authorized on the California coast, in the Hawaiian Islands, and in the Philippines will be advertised about the end of October. The statutory limit of cost for these stations makes it necessary to proceed with the utmost economy, even at the expense of considerable delay. From the amount appropriated in 1912 there remained a balance, after the expenditures necessary for the Darien station, entirely insufficient to cover the cost of one additional station, and additional funds were not made available until the end of the fiscal year. It is expected that a considerable saving may be effected by placing one contract for all the towers for the three stations mentioned, and the principal reason for delay has been the endeavor to accomplish this saving by waiting for the additional funds necessary to proceed with all these stations at once. A difficulty in the way of immediate action, now that funds are available, lies in a legal flaw in the title to the property selected as a site for the California station, the only station of the chain for which private property had to be acquired, but this difficulty, after long negotiations, is now in a fair way of quick settlement.

The stations at Guam and Tutuila, also authorized in connection with the high-powered chain, are not required by the conditions of the problem to be of so powerful a character as the other stations mentioned, and, moreover, the existence of small stations already established at these places, which may be largely used in the final construction, will probably cause only a small draft against the high-powered station appropriation in connection with these stations. However, even for the four large stations required, the statutory limit of \$1,000,000 is just about half the amount that is being spent by other Governments and commercial concerns to build the same number of stations designed to communicate over like distances. The bureau's plans do not contemplate exceeding the appropriations, and the plans have been drawn as far as possible to insure that there shall be no waste in remodeling the stations if additional funds are provided hereafter. To provide stations that can be regarded as efficiently fulfilling the requirements of the situation, as judged by present-day practice and the possibilities of the art, will require an additional allotment of \$500,000, and even at this figure the total cost will be much less than has been allowed for stations of comparable characteristics erected by other Governments and commercial concerns.

The history of the bureau shows that it has been in the very forefront of progress in recognizing the tendency of the art, in making decisions of radical nature that have influenced world-wide development, and in acting along independent lines. As examples, it is sufficient to cite the high-powered station project, the building of Arlington, the specifications above referred to, the adoption of arc apparatus in the face of adverse reports by the world's greatest authorities, the first discovery of the most efficient method of receiving arc signals, the development of methods of high-frequency measurement, the development of instantaneous wave-changing apparatus, and many other smaller matters of great importance. Not a single action of the bureau in this line has proved to be a mistake or has failed of having its wisdom confirmed by subsequent development.

No money has been spent for unnecessary material, and the expenditures for development work have been insignificant compared with what has been accomplished.

ALASKAN COAL.

The expedition to the Matanuska coal field under the technical direction of the Director of the Bureau of Mines completed its work and transported the coal to tidewater, whence it has been shipped to the navy yard, Puget Sound. It was expected that the test of this coal would be completed before the date of this report, but it was necessary to delay it on account of the necessity of sending to Mexican waters all ships suitable for making this test. It is hoped that a vessel will soon be available for the purpose, and that the test will be conclusive as to the merits of the coal from this field.

FUEL OIL.

On account of the increasing price of fuel oil and the necessity of an adequate supply, the following steps were taken during the year, to decrease the Navy's expenditure:

(a) A board was appointed to determine the lowest safe flash point for fuel oil stored and used on board ship.

(b) An investigation was made to determine the feasibility, desirability, and expense of constructing a pipe line from Oklahoma to some point on the Gulf of Mexico for the purpose of supplying fuel oil for the Navy.

(c) A study was begun of the condition in and the status of the naval petroleum reserves in California.

The report of the flash point board resulted in making the specifications for fuel oil less rigid. On account of the new specifications, the increased production in the midcontinent field, and the pipeline investigation, and other probable causes, the contract price for fuel oil for this fiscal year was 61 cents a barrel less than for the preceding year.

TESTS OF SUBAQUEOUS COAL.

The coal stored at New London under the three different conditions, in the open, under cover, and under water, was given the third annual evaporative test. No marked difference in evaporative efficiency was shown between the coal stored under different conditions, and no conclusive evidence developed as to the best method of storing coal.

INSPECTION OF MATERIAL.

The work of this division increased materially during the year and imposed a heavier task on the inspectors in the field, which has been performed with marked efficiency. The principal cause of this increased work lies in the practice of purchasing material f. o. b. works, instead of at the point of delivery, which practice requires that inspection of much material which had heretofore been inspected on delivery be made before shipment. The increase in the quantity of material inspected is apparent from the following tabular statement for 1913 and 1914.

Comparison of the inspection work performed during the fiscal year ending June 30, 1914, with that of the preceding fiscal year, is indicated in the table below:

Bureau for which inspection was made by inspectors of engineering material.	Pounds inspected and passed.	
	1913	1914
Steam Engineering.....	27,164,464	37,264,902
Yards and Docks.....	27,787,697	34,390,921
Supplies and Accounts.....	1,974,131	610,848
Construction and Repair.....	325,775	338,138
Ordinance.....	809,949	1,964,125
Navigation.....	5,670	3,640
Medicine and Surgery.....	10,725	.....
	58,079,411	74,572,574

Number of—		
	1913	1914
Districts.....	8	8
Officers in charge.....	7	7
Civilian assistants.....	29	30
Warrant officers.....	1	2
Chemists (Pittsburgh, Pa.).....	1	1
Manufacturing establishments at which inspections have been made.....	626	788

In addition to the material inspected by inspectors of engineering, there was inspected by the inspectors of machinery in 1913, 4,659,908 pounds, and in 1914, 5,686,218 pounds.

The total weight of material inspected and accepted by inspectors of engineering material in 1913 was 58,079,411 pounds and in 1914 was 74,572,574 pounds.

Material rejected by inspectors of engineering material in 1913 was 3,143,981 pounds, and in 1914 was 3,241,818 pounds.

Cost of inspection per ton in 1913 was \$3.22 and in 1914 was \$2.55.

Material inspected in each district.

	Pounds accepted.	Pounds rejected.	Cost of inspection.
South Bethlehem.....	5,810,910.00	380,242	\$3,668.65
Pittsburgh.....	39,333,541.00	2,138,055	29,823.85
Philadelphia.....	13,985,126.00	398,718	9,111.43
Schenectady.....	2,085,055.00	.....	1,355.63
Brooklyn.....	4,278,630.00	115,741	20,237.88
Hartford.....	1,975,680.00	86,979	6,679.18
Boston.....	2,326,316.00	13,331	10,982.84
Chester.....	4,777,316.00	108,752	3,052.12
Total.....	74,572,574.00	3,241,818	84,911.58
Quincy.....	409,436.00	.....	.....
Cramp's.....	276,040.50	.....	.....
Bayonne.....	4,176,032.00	.....	.....
Camden.....	583,493.25	.....	.....
Bath.....	239,893.00	4,120	.....
Newport News.....	424.00	.....	.....
Total.....	5,686,218.75	4,120	.....

MACHINERY OF VESSELS UNDER CONSTRUCTION.

The work is progressing in a regular manner under the supervision of the inspectors of machinery, but, as the character of the work is becoming more varied and extensive, the necessity for a larger inspec-

tion force is generally apparent. While the present force is able to carry on the work with a fair degree of success, much better results would follow if a more adequate force were provided, both at the offices of inspectors of machinery and at the bureau.

The accompanying tables give the results of trials of new vessels delivered during the year and the condition of work on those under construction.

R. S. GRIFFIN.

The SECRETARY OF THE NAVY.

REPORT OF THE SURGEON GENERAL.

DEPARTMENT OF THE NAVY,
BUREAU OF MEDICINE AND SURGERY,
Washington, D. C., September 16, 1914

To: Secretary of the Navy.

Subject: Annual report for fiscal year 1914.

The following report of the activities of the bureau is submitted.

During the year from December 31, 1912, to January 1, 1914, the health of the Navy was good, and there was a satisfactory improvement over the preceding year, as shown by the following table, which gives the admissions and readmissions, sick days, and deaths per 1,000 of the personnel of the Navy and Marine Corps for the average year, for 1912 and for 1913.

Term.	Admissions and readmis- sions, all causes.	Sick days.	Deaths.
Average, years 1901-1910.....	897.35	10,871.12	5.38
1912.....	787.46	9,449.39	4.08
1913.....	760.03	10,041.41	3.82

The slight, but steady, improvement which has continued year by year for a considerable period is noted also for the year 1913.

DISEASES OF SPECIAL INTEREST.

MALARIA.—The incidence of this disease increased from 11.63 per thousand in 1912 to 12.07 in 1913. This increase is accounted for by the cases occurring on ships in Mexican waters. The value of screening was well demonstrated, those ships which were well screened escaping the disease or having only a few cases, while unscreened ships under the same conditions had a large number of cases. Efforts to prevent breeding of mosquitoes have been continued at all stations and have been successful except at certain places, particularly Annapolis, Mare Island, and Philadelphia, where breeding continues in areas adjacent to naval stations.

DIPHTHERIA.—Admissions increased from 0.93 per thousand in 1912, to 1.10 in 1913. As in 1912, there were no deaths from this disease. Several epidemics occurred during the year, but by early detection and isolation they were quickly controlled.

SMALLPOX ON U. S. S. "OHIO."—An outbreak of smallpox on the *Ohio* began in December, 1913, and there were 29 cases with 5 deaths.

The *Ohio* and *Vermont* visited Marseille and remained there for about a month. Liberty was freely granted during this time. Smallpox of a virulent type was known to be present in Marseille, and the weekly Public Health Reports, issued by the Public Health Service, showed many cases occurring, with a high mortality. The crew of the *Vermont* was carefully examined and general vaccination done before leaving for European waters. No smallpox appeared on the *Vermont*, although her men were exposed in the same manner as those of the *Ohio*.

There is no record of any vaccination having been done on the *Ohio* for two years before this outbreak, and vaccination of this crew immediately after gave 89.57 per cent of "takes," about what would be expected in an unprotected community.

The medical officer of the Naval Station, Guantanamo, states: "Of the 25 cases of smallpox received, 11 were of a serious confluent variety, and some of the 11 were malignant and hemorrhagic. In none of these cases could I find any scar of successful vaccination. The remaining 14 cases were all mild—varioid in fact. All of these showed vaccination marks."

A draft of 100 recruits was received on the *Ohio* shortly before sailing for Europe. These men were freshly vaccinated, and no smallpox occurred among them.

As a result of this epidemic the *Ohio* was useless for military purposes for a long time, a considerable expense was incurred, and an incalculable amount of suffering endured by the personnel of the *Ohio* and by the relatives and friends of those on board. The incident shows the necessity for the greatest care on the part of every medical officer in assuring himself that every man for whom he is responsible is protected. This bureau has recommended certain changes in the Navy Regulations and Instructions which, if adopted, will decrease the chances of other outbreaks by adding to the thoroughness of protection. It should here be emphasized that the only satisfactory evidence of successful vaccination is the *pitted* vaccination scar.

TYPHOID FEVER.—The incidence of this disease in the service for the past five years is shown by the following table:

Typhoid fever.

Year.	Admitted.		Died.	Sick days.
	No.	Rate per 1,000.		
1909.....	189	3.30	17	10,378
1910.....	193	3.30	10	9,426
1911.....	222	3.61	15	14,024
1912.....	57	.92	2	5,234
1913.....	22	.33	4	1,657

It will be noted that a considerable decrease from 1912 occurred, and that the admissions in 1913 were less than 10 per cent of those in 1911. This is gratifying, but not satisfactory, since the Army, by

the same means, has practically eradicated the disease. Omissions and clerical errors occur whereby men escape inoculation, and through conditions of transportation the prophylactic may be deteriorated when received at distant stations. These conditions require close study, and every effort will be made to discover and correct material or personal shortcomings which interfere with perfect protection against the disease.

No one knows how long the immunity produced by the prophylactic will last. This question will arise. In fact, it has arisen already, and every effort should be made to attempt the solution of this question. The advice and work of our own specialists in connection with those of the Army and Public Health Service, it is hoped, will give us this information before the immunity is lost. A word of caution is needed. The tendency is to rest on a feeling of security developed by the results of the past two years, and any lack of care on the part of the individual medical officer to assure himself that every man under his care is absolutely protected may lead to failures.

TUBERCULOSIS.—The incidence of this disease is about the same as for the preceding year. Of the 367 patients treated during 1913 at the Naval Hospital, Las Animas, Colo., the Navy's sanatorium for tuberculosis, 10.3 per cent had concurrent syphilis. This complication adds greatly to the gravity of the disease, and when combined with alcoholism, as frequently occurs, the outlook is practically hopeless. Treatment by inhalation of creosote has given encouraging results. The treatment by graded rest and labor has been further elaborated and has fully justified all the expectations of those responsible for its adoption.

The Government maintains three sanatoria for tuberculosis, the Army, the Public Health Service, and the Navy having separate institutions, which are maintained at great expense. It is believed that these could be combined, and that a single institution could care for the patients of all three services at a greatly reduced expense and with no loss of efficiency. While the joint use of hospitals is not considered practical or desirable under usual conditions, the objections do not obtain in the case of tuberculosis sanatoria, since the patients of these institutions are rarely returned to duty, and their military efficiency may be considered as ended when treatment in a tuberculosis hospital is found necessary.

VENEREAL DISEASES.—The incidence of venereal infection shows a considerable decrease from that of 1912, as shown by the admissions per 1,000 in the following table:

Disease.	1911	1912	1913
	Admissions per 1,000.	Admissions per 1,000.	Admissions per 1,000.
Gonorrhea.....	92.15	87.29	80.69
Syphilis.....	27.11	23.00	21.94
Chancroid.....	31.41	35.04	28.13
Combined.....	150.68	145.33	130.78

To some extent this decrease is probably to be placed to the credit of the system of venereal prophylaxis and the increasing use of preventive packets which are purchased by the men. It must be borne in mind, however, that liberty has been granted less freely during this year than during the average year because of the presence of many ships for long periods in Mexican waters.

The present system of prophylaxis has been in force for about three years and it is now possible to draw definite conclusions as to its efficacy. In the Atlantic Fleet, from each ship of which uniform reports are available, the percentage of infection after prophylaxis for 1912 was 2.47 and for 1913, 3.47. The figures for these two years are so closely approximated that it is reasonable to assume that a standard for the method has been reached.

The Army works under a law which deprives all persons of their pay while unfit for duty by reason of this class of disease, and their experience with it has been such as to justify a strong recommendation for similar legislation in the Navy.

APPENDICITIS.—The incidence was practically the same as in 1912. In the Atlantic Fleet there were 173 cases with no deaths in 1912, and 168 cases with no deaths in 1913, a very creditable showing.

ALCOHOLISM.—Admissions for this condition continue to decrease and the comparison of figures for 1913 with those of the preceding three decades indicates the improvement in this direction.

Period.	Complement.	Admissions.	Rate per 1,000.
1882-1892.....	11,775	291	24.71
1892-1902.....	31,240	248	7.93
1902-1912.....	61,897	241	3.89
1913.....	65,926	228	3.45

The efficiency of the habitual drinker is so lessened that he can not hold his own with rivals for advancement whose faculties are always alert. Men live in such close association on board ship that one who indulges in alcohol to excess causes discomfort to many others, who will not tolerate his presence. The development of this attitude of the men, with the recent order prohibiting the introduction of alcoholic liquors on ships and at stations, should cause a still greater reduction in alcoholism.

MENTAL DISEASES.—During the year of 1913 there was a slight increase in the rate for mental diseases over the previous year. The following table will show the rate for mental disorders since 1910:

1910 rate for mental disorders.....	5.20
1911 rate for mental disorders.....	4.25
1912 rate for mental disorders.....	3.97
1913 rate for mental disorders.....	4.11

The rate per 1,000 of those invalided from the service for mental disorders during the year 1913 was larger for the Marine Corps than for the Navy, the rate for the Navy being 1.81 per 1,000 against a rate of 2.33 per 1,000 for the Marine Corps. About 10 per cent of those admitted for mental diseases during the year were surveyed from the service within four months of the time of enlistment. A satisfactory method of detecting the mentally weak is receiving careful consideration by the Medical Department. A modification of the Binet-Simon

method with suitable mental tests has been devised by Acting Asst. Surg. A. R. Schier, and his article has been published in the Naval Medical Bulletin and also has been published in the form of a reprint by the Marine Corps Publicity Bureau. At the same time careful mental examinations have been conducted by Passed Asst. Surg. G. E. Thomas at the naval prison, Portsmouth, N. H., using the Binet-Simon and other methods.

At the disciplinary barracks, Port Royal, S. C., examinations of this character have also been conducted by the medical officer and the material returned has been carefully studied. The subject has also received careful study by the medical officer stationed at the Government Hospital for the Insane with a view to devising, if possible, some mental test which would eliminate those liable to develop mental disorders or to become offenders against naval discipline.

The detection and exclusion of individuals of this class at the recruiting stations would not only greatly reduce the cost at the prisons and hospitals, but serve as an economic aid to other bureaus having to do with the personnel. This bureau is not satisfied that any of the intelligence tests used up to date are sufficiently exact to do any more than approximate the mental status of the individual under examination. It would appear that where the individual is examined by two or more examiners at different times different results are apt to be established, and while the results may not vary greatly, the difference is sufficient to show the unreliability of the test. Furthermore, the application of this test to 300 prisoners and to persons in the prison guard rated as good soldiers affords results which are disconcerting if we are to place any reliance upon the method. For instance, the results obtained from a group of 3 sergeants, 4 corporals, and 3 privates of the marine guard selected as above the average of efficiency show that the average mental age established was below that of the 300 prisoners under their care. In fact, the medical officer making the examination said that "if the Binet-Simon tests were applied to these men on enlistment and the maximum required, not one of them would have been taken into the service."

Furthermore, some of the prisoners whose records show them to be most undesirable in every way could pass a satisfactory examination by the Binet-Simon method, and would thus have been admitted to the service.

It therefore appears that the intelligence tests applied up to date are not satisfactory in determining the individual's degree of mentality, independent of other considerations.

The problem is one of considerable interest to the bureau because of its economic bearing on the service and the present lack of any satisfactory method of determining the mental status of the applicant for enlistment. Results which would justify a recommendation for the adoption of any system have not yet been accomplished; but the investigation will be continued until the advisability or inadvisability of adopting a mental examination before enlistment is determined.

SANITARY CONDITIONS AND MEASURES AFLOAT.

RATION.—The Navy ration is considered excellent in quality and sufficient in quantity. If any criticism can be made, it is that the quantity of meat and fats is too great, especially in the Tropics.

A reduction in these, with an increase in vegetables, would be of advantage. Fruit is a most important element of the ration and the beneficial effects of fresh fruits are often observed. The quantity of fruit in the ration should be increased on going to sea, and much of the prevalent constipation would thus be obviated.

TOILETS.—The type of toilet equipment with which ships are now fitted has been found faulty in many respects and it is believed that a more satisfactory type could be obtained. Toilets should be installed in isolation wards and the bureau is informed that the ships about to be built will have toilets adjacent to isolation wards and restricted to use by the occupants of such wards. The present condition necessitates the use of close stools and these often have to be carried for a long distance and through several compartments before they can be emptied. Thus the danger of spreading contagious disease is greatly increased and the efforts at isolation are largely nullified.

CLOTHING.—The disadvantages of the white uniforms, to which attention has so often been called, were again illustrated when it became necessary to send the bluejackets ashore during the operations at Vera Cruz. As a makeshift, some of the men dyed their whites with a solution of iron sulphate; but this was far from satisfactory and would seldom be feasible. Several types of fabrics, such as khaki and forestry green, are available and would be more suitable for wear on board ship and particularly for expeditionary forces on shore; they have been adopted by many military organizations and their adoption by the Navy would be a great improvement over present conditions.

FIRST-AID INSTRUCTION.—Following a general order from the commander in chief, more interest has been shown in the giving of first aid to the enlisted personnel by division officers.

In some cases the officers show commendable zeal and a sense of the importance of this instruction, so valuable not only under actual fighting conditions but also for daily use. However, the feeling is that in general many officers do not realize the importance of this work and do not carry out the provisions of the order in regard to the instruction with the spirit and zeal to be desired. After two years of observation it is still a question if it would not be better to return to the former system of giving first-aid instruction by the medical officer and hospital corpsmen of each ship. The divisional officer does not feel that he is qualified or that it pertains to his duties. All active and interested medical officers rather feel that this work specially belongs to them; most of them feel that they have the time to give the instruction. It would also permit the medical officers to come in close contact with enlisted men and enable them to supplement the present meager instruction in first aid with many hygienic hints and suggestions as to their mode of life, and to call attention from time to time to points pertaining to the special locality or conditions existing. It is believed that careful consideration should be given this matter, possibly a board appointed to consider the question in all its phases and that, having determined how the object desired is best to be obtained, final and stringent steps should be taken to see that this work is not neglected.

HOSPITAL SHIP.—The hospital ship is generally conceded to be of the greatest value and it gives a real security, when present with the

fleet, that is actual and important. For the treatment of special cases, both medical and surgical; the removal of all infectious diseases from the ships of the fleet; for consultation, access to every instrument and device for accurate diagnosis and treatment; a corps of specialists; as a supply ship; for emergency needs and as a medical base for possible expeditions—for all these and many other uses the hospital ship has been demonstrated to be an important and useful factor in the fleet, supplying the place and giving all the support that could be had from the best of our metropolitan hospitals, with the advantage of being able to move with the fleet. The influence for good of such a ship is constantly increasing and her usefulness has by no means reached its limit.

It is suggested that a paymaster be added to the complement of the officers on the hospital ship, as the present system of keeping the patients' accounts on their own ships and those of the hospital corpsmen on the flagship is a very complicated one, especially when the hospital ship has service separated from the flagship, as frequently occurs. This paymaster could also act as commissary officer.

During the early days of the occupation of Vera Cruz, when her presence there was most urgently needed, the *Solace* was forced to return north for necessary repairs to her machinery, leaving the fleet and the forces on shore without the hospital facilities which that vessel provides. This occurrence, while it had no serious results in this particular instance, illustrates the possibility of the fleet being deprived of the services of the hospital ship when of most importance, and justifies the strong recommendation that a second hospital ship be provided for the Atlantic Fleet. Also, the fleet is frequently separated, and, as one hospital ship can accompany but one portion of the fleet, the other must necessarily do without its services.

While the Pacific Fleet was in Mexican waters it had no proper hospital facilities and the need of a hospital ship in that fleet was great. It was necessary to send many patients north on colliers, which usually carry no medical officers, and, because of the shortage in the Medical Corps, it was not possible even to furnish a medical officer for every collier, though one was detailed especially for this purpose. A hospital ship for each fleet is a necessity.

For several years the bureau has been perfecting plans for rapid transformation of a merchant ship into a hospital ship, and a particular ship was selected for the purpose. The Vera Cruz situation demonstrated the weaknesses of such plans. When the ship was needed, it was sought also by the War Department and also by the Bureau of Supplies and Accounts of the Navy; authorization for its purchase and adaptation to hospital needs was delayed from day to day until finally the crisis was over. Had it been authorized, it would have taken at least six weeks to alter and equip the ship. In any war the Navy's work must be done early and quickly, and the need for hospital ships will be immediate; a delay of six weeks or even much less may see the passing of the period of greatest usefulness of such a ship—the period when her presence will be of greatest value and her absence will cause the greatest suffering. The conclusion is inevitable that the only way to have hospital ships in an emergency is to provide them in advance.

ENGINE ROOM CONDITIONS.—It is noted that on those ships where the experiment of closing in the engine room hatches and providing powerful exhaust blowers at the top of the engine room in addition to the powerful supply blowers at the bottom of the engine room has been tried it has proved to be a great success, and the engine room conditions on such ships are ideal, the temperature seldom going above 90° in moderate climates and often lower. The only drawback is the fact that if anything were to interfere with the system of ventilation—if a blower should become disabled either in ordinary use or, more important, in time of battle—the situation in the engine room would be unbearable. The solution of the engine room conditions seems to have been reached, the only question being whether we can always depend on uninterrupted power to the electric motors.

GENERAL PHYSICAL CONDITION OF THE PERSONNEL.—The general physical condition of the personnel is good. When it is considered that the average age is 22 years, it is not surprising that many men appear slender and immature. However, a short period in the service changes this condition and the men rapidly fill out and present a good musculature with healthy and progressive development. Groups of men have been selected from time to time at random and examination, stripped, has in most cases shown an unexpected and satisfactory physique.

Observation and reports seem to indicate that the Swedish system of physical training is the best factor in the physical development of the personnel that has been tried in the service. Daily observations, where this system is constantly in use and carefully carried out, as on the *Wyoming*, have been most satisfactory, and as the system becomes better known and is more intelligently used, it is believed that it will be the factor productive of most good to the physical well-being of the men. It has been suggested that the Swedish system, being taught at the Naval Academy, should be continued as a daily routine drill for these younger officers, most of whom now lead their divisions in the actual performance of the drill, thus setting an example to the men and assuring interest and zeal in carrying out the selected exercises.

It has been suggested that this daily drill would fulfill most systematically and fully the objects aimed at in the present requirements for the monthly physical exercise of officers, and could replace it up to perhaps the age of 40 years, after which time the physical exercise of officers over 40 should be determined by the board of medical officers making the yearly examinations, and should be prescribed for these older officers as their yearly examination may show their need. It would systematize and carry out in a rational manner the efforts that are being made at the present time to stimulate physical well-being, and its adoption is worthy of serious consideration.

SCREENING.—Ships visiting tropical waters should be thoroughly screened. This was demonstrated by the ships in Mexican waters, several ships having many cases of very severe malaria, while well-screened ships under the same conditions had none. A board has selected uniform types of nets for cots and head nets for issue to ships and expeditionary forces.

SANITARY MEASURES AND CONDITIONS ASHORE.

NAVAL ACADEMY, ANNAPOLIS, MD.—Preventible diseases have been almost entirely excluded from the brigade of midshipmen. This is due in large measure to the clean milk, pure water, and good food with which they are provided. By the score-card system the dairy was rated at 97.63 per cent of a possible 100. The medical officer in charge of family practice cared for 7,108 house visits and 3,810 office consultations during the year 1913.

NAVAL TRAINING STATION, GREAT LAKES, ILL.—The hospital at this station was reopened during the year, as the sick quarters proved insufficient for the number of patients.

NAVAL STATION, GUAM.—The general health at this station has been very good. The native population on December 31, 1913, was 12,501; during the year there were 590 births and 339 deaths. The improvement of the health of the natives was due to (1) establishment of waterworks and public latrines and showers in the smaller towns; (2) efficient street cleaning and disposal of refuse; (3) the course in general and personal hygiene given in the public schools; (4) reduction of the mortality of infants and children by education of midwives and instruction of parents, and treatment of intestinal parasitic infections of school children; (5) segregation of lepers and insane; (6) compulsory treatment of all cases of gangosa; (7) strict quarantine of passengers arriving in Guam.

NAVAL STATION, GUANTANAMO, CUBA.—The new station was completed and occupied in November, 1913. Hygienic conditions at this station are excellent. If this station is to become a permanent base, the most vital problem will be the selection of an adequate and permanent water supply. A consideration of the question resolves itself into the possibilities of (1) finding water on the reservation by artesian or other wells; (2) bringing water from outside the reservation from the streams and springs in the mountains, which would be attended with great expense and give a doubtful supply; (3) bringing water from the Guantanamo River, which seems to be the most feasible, least expensive, and amply adequate.

However, the senior medical officer of the station gives three reasons why water from that source should not be used for drinking purposes: (a) It is a sluggish stream whose entire source is surface drainage; (b) the watershed is inhabited and also used as a stock range; the number of people living on the watershed is increasing and will continue to do so in the future; (c) the watershed will be entirely outside of the reservation and will not be under our control. A large part of the present water supply is secured from the city of Guantanamo and this water is considered to be absolutely pure, coming out of a cave in an uninhabited mountain.

The following extract from the sanitary report of the senior medical officer of the station is worthy of notice: "In my opinion the securing of an adequate and proper water supply for this station which can be maintained in time of war is an impossibility."

A distilling plant with a capacity of 25,000 gallons has been put in operation at the new station.

Yellow fever was brought to Guantanamo on a merchant ship in July, 1913. A strict quarantine was established and efforts made to prevent infection by mosquitoes. No further cases occurred.

NAVY YARD, PHILADELPHIA, PA.—The sanitary condition of that part of the city of Philadelphia adjacent to the navy yard has been mentioned in several previous reports and still continues to be a menace to the health of the yard and the ships.

NAVAL STATION, SAMOA.—The native population on December 31, 1913, was 7,426. Treatment at the Samoan hospital was put on a free basis November 1, 1913, and every inducement is offered the natives to avail themselves of the free treatment. During the year 427 cases were admitted to the hospital.

NAVAL DISPENSARY, WASHINGTON.—The medical officers attached to this dispensary attended to 7,191 office calls and 3,279 house calls during the fiscal year 1914. The dentist attached to the dispensary treated 325 individuals, and there were 12,877 prescriptions filled during the same period. The satisfactory manner in which this enormous amount of work has been performed reflects credit upon the officers and hospital corpsmen on duty at the dispensary.

NAVAL HOSPITAL, LAS ANIMAS, COLO.—The number of patients treated at this hospital during 1913 was 367. As already stated, this bureau believes that a combined tuberculosis hospital for the Army, the Navy, and the Public Health Service could do the work now done by the sanatoria of the three services more efficiently and with a very great saving in the cost of operation.

NAVAL HOSPITAL, MARE ISLAND, CAL.—To relieve the crowded condition of this hospital and to anticipate the increased accommodations necessitated by the presence of the United States and foreign navies at the time of the Panama-Pacific International Exposition, authority was sought for construction of a temporary building, and this authority has been granted. Plans are now being prepared by the Bureau of Yards and Docks.

NAVAL HOSPITAL, PUGET SOUND, WASH.—Authority has been granted for construction of a temporary building to relieve the present overcrowded condition of this hospital and to provide additional facilities in anticipation of the increased work when the United States and foreign fleets visit the west coast at the time of the Panama-Pacific International Exposition.

SANITARY CONDITIONS AND MEASURES IN GENERAL.

RECREATION AND LIBERTY.—The beneficial effect of contentment on general health, and especially its effect both in preventing and in hastening recovery from, the minor ailments has been observed since the earliest days of the Navy. Liberality in granting liberty and the encouragement of healthful sports and recreations have helped in the continued improvement of health.

Of the recent developments of this idea the following are worthy of mention: In Samoa an enlisted men's club has been organized, and the medical officer states that its value can not be overestimated. It affords various means of amusement, such as magazines and newspapers, player piano, Victrola, pool tables, and bowling alleys. In the Atlantic Reserve Fleet a compartment on the *Mississippi* was set aside for recreation purposes and this was a subject of commendation by the medical officer because of its good effect in increasing contentment and improving the morale. The fleet surgeon of the

Pacific Fleet states that the wise rotation of swimming, boating, fishing, and camping parties for the men, frequent moving-picture shows, minstrel and vaudeville entertainments and competitive athletics of many sorts have contributed more than anything else to promote contentment and the mental and moral health of the crews, which underlie the excellent physical health existing generally throughout the fleet.

The unfavorable effect of deprivation of liberty is shown by the reports from ships whose presence in Mexican waters for prolonged periods was required at a time when it was not feasible to grant liberty.

The number of cases of boils and petty illnesses was increased and convalescence from more serious illness was prolonged. Since the practice of granting liberty has been resumed, those conditions are reported to be greatly improved.

EDUCATION.—As a part of the department's policy of systematic education of the enlisted personnel, the bureau has prepared a text book, the "Handy Book for the Hospital Corps." In this book the following subjects are treated in detail: Anatomy and physiology, first aid, emergency surgery, bandaging, field hygiene and sanitation, the march, hygiene and sanitation, personal hygiene, air and ventilation, prevention of disease, pharmacy, medicines and medicinal agents of the supply table, chemistry, naval hospitals, hospital duties and ward management, nursing, the operating room and surgical technique, and clerical duties. This book affords a valuable means for systematizing Hospital Corps instruction and will result in more satisfactory education of that corps.

PHYSICAL TRAINING.—The modified Swedish system which is being gradually introduced into the service has been the subject of much commendatory notice. This system aims to develop quickness and efficiency of the mind as well as of the body.

EXPEDITIONARY FORCES.—The recent maneuvers of the Advanced Base Brigade at Culebra, West Indies, afforded an unusual opportunity for the drill and observation of the Medical Department with landing forces and also to demonstrate the good and bad features of equipment for the same, including the new brigade medical outfit. The work of this brigade was an excellent preliminary training for the operations at Vera Cruz which found the brigade ready organized, equipped, and trained for its duties ashore.

OPERATIONS AT VERA CRUZ.—On April 21, 1914, the occupation of Vera Cruz was begun. The following medical officers landed on this day: Brigade surgeon, Surg. M. S. Elliott; regimental surgeons, Surg. Jacob Stepp, Passed Asst. Surgs. H. L. Kelley and J. B. Pollard, of the Second Regiment of Marines; Passed Asst. Surg. R. J. Straeten, battalion surgeon, U. S. S. *Florida*; Asst. Surg. W. E. Eaton, battalion surgeon, U. S. S. *Utah*.

A field hospital was located in a frame building at Pier No. 4 in command of Surg. Jacob Stepp, with Passed Asst. Surgs. Kelley and Pollard as assistants. Passed Asst. Surg. R. J. Straeten accompanied the *Florida* battalion.

The ambulance party was divided so as to render aid to the different companies, and concerning their behavior the division surgeon

makes the following statement: "The Hospital Corps and stretcher bearers of the ambulance party should be highly commended for their strict attention to duty and behavior under heavy fire. In the hottest skirmishes of the first day's firing, the wounded were attended to without the slightest delay and without a thought of the personal danger encountered in leaving cover."

Nineteen wounded were sent aboard the U. S. S. *Prairie* this day and were there attended by Passed Asst. Surg. Harry Shaw, United States Navy, with the able assistance of Fleet Surg. Pope, of H. M. S. *Essex*, the surgeon of the Spanish cruiser *Carlos V*, and Surg. J. M. Brister, of the *Utah*.

Twenty-two wounded and four dead were received at the field hospital on the 21st. During the day the hospital was under fire practically all the time, and several bullets went through the building.

The *San Francisco* battalion landed early in the morning of the 22d, and Passed Asst. Surg. T. W. Reed, with an ambulance party, established an aid station in a warehouse near the water front. The wounded received at this station, including three Mexicans, were promptly sent off to the *Solace*.

The *Arkansas* battalion landed at 3 a. m. on the 22d, with Passed Asst. Surg. S. L. Higgins and an ambulance party. This ambulance party did excellent work, and the members of it were frequently under fire.

The ambulance party of the *Utah's* battalion, under the direction of Asst. Surg. W. E. Eaton, performed their duty most creditably. These men were under fire during the entire afternoon of April 21, both in an exposed position at the place of landing, and on the firing line.

The Second Regiment of the Naval Brigade landed at 3.45 a. m. on the 22d. The medical officers of this regiment were: Regimental surgeon, Surg. C. D. Langhorne; battalion surgeons, Asst. Surgs. J. T. Borden and C. C. Wilson. There were 12 hospital corpsmen and a number of stretcher bearers. Surg. Langhorne, in his report, calls attention to the excellent work done by the hospital corpsmen. The casualties were as follows: April 21, killed, 4; wounded, 2; April 22, killed 13, wounded 41; total killed, 17; total wounded, 63.

During the remainder of the occupation the various medical officers and their detachments were occupied in looking out for their own men and organizing sanitary services.

The field station in the Terminal Hotel was kept in commission until the 25th. In addition to the regular detail, the following medical officers were on duty at this place: Surg. D. N. Carpenter, Surg. A. Stuart, Passed Asst. Surg. P. R. Stalnaker.

On April 23 an inspection was made of the city's four hospitals to determine their condition and availability for use. San Sebastian Hospital was placed under the charge of Surg. D. N. Carpenter, who had as assistants Passed Asst. Surgs. Kelley and Higgins.

Throughout all the reports from medical officers comments are frequently made on the manner in which the members of the Hospital Corps performed their duties. Undoubtedly many lives were saved by their unremitting labors while exposed to the enemy's fire.

For a year or more the necessity of landing forces on Mexican territory had appeared to be imminent enough to justify the formu-

lation of complete plans for such a landing. The fleet surgeon of the Atlantic Fleet, with his assistants, had carefully worked out, in every detail, the equipment of the landing forces, the organization of the Medical and Hospital Corps, and the sanitary organization to take charge of the public health and sanitation of whatever cities might be occupied. The advance preparation of these plans greatly aided the smoothness of operation which characterized the entire maneuvers. The work of this brigade was an excellent preliminary training for the operations at Vera Cruz, which found the brigade ready organized, equipped, and trained for its duties ashore.

The sick and wounded who it was considered would not be available for duty within a very short time were transferred on the hospital ship *Solace* to the Naval Hospital, New York. These patients, as well as their friends and relatives, joined in praise and appreciation of the comfort and the complete facilities afforded both by the *Solace* and the Naval Hospital, New York. Not a single complaint has been heard of the conduct or treatment provided by any member of the Medical Corps or Hospital Corps.

After the arrival of the Army at Vera Cruz the bluejackets returned to the ships, while the marines remained with the Army on shore. Diarrhea and dysentery appeared among the men on shore, and, for a time, threatened to become a serious problem, but these diseases were probably fly-borne, and by sanitary measures, such as care and removal of kitchen waste, screening of kitchens, mess halls, and patients sick with these diseases, they have been practically eliminated. Malaria appeared when the rainy season came on, and a number of cases occurred, as it was impossible to protect by screens those men on outpost duty and those who were moving from place to place. The sick list, which was 3.18 per cent for the week ending June 3, has gradually decreased, and was only 1.90 per cent on August 25. This very creditable showing is the result of the careful observation of sanitary principles, and is a source of gratification to the whole Medical Department.

These activities at Vera Cruz taxed to the limit both the supplies and the personnel of the Medical Department. The stock of the medical supply depot at Brooklyn was entirely depleted in certain necessities, and had the action been prolonged or of a greater scope it would have been necessary either to accept contributions of such supplies from the Red Cross, or similar organizations, or to purchase them in large quantities in the open market at a considerably advanced price.

The shortage in the Medical Corps and in the Hospital Corps caused considerable embarrassment, as a large number of ships were put in full commission that formerly had required no members of these corps. Fortunately, the bureau was able, by calling upon acting assistant surgeons and members of the Medical Reserve Corps, and by reducing the complements of the shore establishments below the normal standard, to supply all demands for additional personnel.

The presence in the bureau of medical officers whose personality and experience particularly fitted them to solve the problems of equipment and personnel was invaluable, and these officers are deserving of great praise for the manner in which the unusual duties devolving upon the bureau were performed.

PERSONNEL.

MEDICAL CORPS.—During the year ending June 30, 1914, 28 medical officers were admitted to the corps and 10 officers were lost by death, retirement, or resignation, making the total strength of the corps 311. The vacancies now number 36. The last year stands in contrast to other years in that for the first time in three years the number taken into the corps was in excess of the number lost by death, resignation, or retirement. This increase was due to a change in the method of taking medical officers into the corps. Candidates were formerly appointed directly to the Medical Corps from civil life. A candidate is now first given a preliminary examination for appointment as assistant surgeon in the Medical Reserve Corps, and, after taking the course at the Naval Medical School, comes up for final examination, and should he successfully pass this examination is appointed an assistant surgeon in the Medical Corps. Out of the 75 men who received permits for the preliminary examination 23 were rejected physically. Of those who continued the examination 12 failed professionally and 5 withdrew before its conclusion. The total number passing was 35. These men were graduates of 25 different medical schools, and most of them were hospital men. Twenty-eight men successfully passed the final examination, and 27 of these have been commissioned. The year just passed has been marked by greater activity on the part of the Medical Corps than previous years. By July, 1914, there were 42 more medical officers at sea than in July, 1913. The large number of ships in commission, five regiments of marines equipped for expeditionary work, and the demand for medical officers on the foreign stations and with legations abroad, have resulted in a situation wherein the number of medical officers at sea is in excess of the number employed at the naval hospitals, navy yards and stations, the recruiting stations, and the various other activities on shore.

SPECIAL DETAILS.—The following officers have been engaged in special duties, aside from the usual activities of the Medical Department: Passed Asst. Surg. P. E. Garrison, with the Pellagra Commission and as lecturer in the Harvard Medical School; Passed Asst. Surg. G. B. Crow, as instructor in tropical medicine in the New York Postgraduate Medical School; Passed Asst. Surg. J. O. Downey, with the Alaskan Coal Investigating Commission; Passed Asst. Surg. E. W. Brown, with a board for investigating the air of submarines; Asst. Surg. G. R. W. French, with a board for investigating the conditions of deep diving.

The present size of the corps is entirely inadequate for the service requirements, and should be increased to at least 450 for a peace-time basis.

MEDICAL RESERVE CORPS.—During the year the services of officers of the Medical Reserve Corps have been utilized at the recruiting stations and on board several ships. Valuable assistance in certain specialties has been rendered by members of this corps at naval hospitals. This service has been entirely without pecuniary reward and with no purpose other than a patriotic desire to aid in the well-being of the country's protectors. A prominent surgeon of Washington, D. C., a member of this corps, volunteered for active duty, and was sent to Vera Cruz, where his services were highly valued.

DENTAL CORPS.—There are at present 13 vacancies in the Dental Corps. A number of candidates have applied for the examination, and it is expected that when the next examination is held most of these vacancies will be filled. Most of the large stations are equipped with a dental outfit, and an officer of the Dental Corps is assigned to the station for duty. As soon as additional officers are obtained they will be ordered to certain ships in the fleet, where it is hoped their services may be utilized to great advantage.

HOSPITAL CORPS. The Hospital Corps, on June 30, 1914, consisted of 24 chief pharmacists and pharmacists, 285 hospital stewards, 563 hospital apprentices first class, and 565 hospital apprentices, a total of 1,437.

The above number of men has been inadequate properly to man the hospitals, ships, stations, and expeditionary forces of the service, and the hospitals are sadly in need of more hospital corpsmen properly to care for the sick and disabled men of the service. The large number of ships in commission, together with five regiments of marines in the field, has made it necessary to strip all of the hospitals and shore stations in the service to a complement much below that which is necessary to perform the ever-increasing work at these places.

A Hospital Corps training school has been established at the Naval Training Station, Newport, R. I., with facilities for teaching newly enlisted hospital apprentices. Instruction is given in the following subjects: Anatomy, physiology, minor surgery, hygiene and sanitation, clerical work, chemistry, materia medica and pharmacy. There are at present about 80 men under instruction. It is hoped that a similar school may be inaugurated for the training of hospital corpsmen on the west coast in the near future. A "Handy Book for the Hospital Corps" has been prepared in the bureau, with particular view to the special needs of the naval service, and is being used by the hospital corpsmen under instruction, as well as those throughout the service.

When the recent legislation providing for the grade of chief pharmacist was enacted, the bureau anticipated that the unsatisfactory conditions due to the lack of men of this grade would be alleviated. But an opinion of the Judge Advocate General to the effect that such legislation did not contemplate any increase in the corps, but only the establishment of a higher grade, has nullified the act so far as the bureau's purposes are concerned. At least 50 pharmacists and chief pharmacists are required properly to carry out the work and safeguard the property of the Government.

Reenlistments in the rating of hospital apprentice first class are much lower than is desirable, and as these men do the larger proportion of the trained work, they should have more inducement toward reenlistment. It is believed that, with ratings and grades of pay similar to those of the deck force of the Navy, many of these experienced young men would return to the service instead of seeking employment in civil life after having received the benefit of the Navy's education and training. I therefore believe it to be one of my most important duties to urge that such legislation be enacted as will entitle hospital corpsmen to the increase in the number of ratings, with the accompanying pay enjoyed by other branches of the service, thereby increasing the efficiency and contentment of this corps.

NURSE CORPS.—During the year 43 nurses have been appointed and 38 have left the corps. Additional nurses have been sent to Guam, in order to provide for an increase in the class of native women undergoing instruction in nursing at the hospital of that station. The course of instruction for this class has been extended to include the care of tubercular patients and massage, nurses especially trained in each branch being provided. The progress of the native nurses in this work is gratifying. The training school for native women in Samoa, mention of the establishment of which was made in last year's report, is progressing satisfactorily, and the four women now in training have made such advancement as to justify the undertaking.

In general, the Medical Department of the Navy seems to be efficient and prepared to meet all present peace-time demands. No new construction is contemplated at present, except as unusual conditions may demand at special points, but every effort will be made to preserve and improve the existing equipment for this important work of the Navy.

W. C. BRAISTED.

REPORT OF THE MAJOR GENERAL COMMANDANT OF THE UNITED STATES MARINE CORPS.

HEADQUARTERS UNITED STATES MARINE CORPS,
Washington, October 2, 1914.

From: The Major General Commandant.

To: The Secretary of the Navy.

Subject: Annual report of the condition and service of the United States Marine Corps for the fiscal year ending June 30, 1914.

Reference: (a) Official memorandum, Secretary of the Navy, August 3, 1914.

1. In compliance with the department's instructions contained in reference (a), the following report of the condition and service of the United States Marine Corps for the fiscal year ending June 30, 1914, is submitted.

2. During the period covered by this report officers of the adjutant and inspector's department have made the usual inspections, and the reports in connection therewith have shown satisfactory conditions as to the health, discipline, and efficiency of the corps. In this connection, however, the undersigned desires to state that in his opinion the long-continued service in the tropics occasioned by the frequent expeditions that have been sent out is bound to have an unfortunate effect on the health of the Marine Corps. At some of the posts the lack of adequate and sanitary barracks has caused adverse reports to be made, and the necessity for buildings to be used as drill halls and gymnasiums and for facilities to provide legitimate amusements within the garrisons for the enlisted men thereof has been the subject of numerous reports. These conditions are being improved so far as practicable from year to year, but the amount that can be used, with the regular appropriations, is of necessity limited. When such buildings are provided the tendency is for the men to remain within the limits of the garrison, but where the men are required to go into the near-by towns and cities for their

amusements the result is usually unfortunate and causes over-indulgences of various kinds, frequently culminating in trials by court-martial or in desertion. In this connection the undersigned wishes to state that he considers it essential to the efficiency of the Marine Corps and for the information of headquarters that at least yearly inspections of all posts by officers of the adjutant and inspector's department be made. Such inspections not only bring to light but also remedy irregularities, cause commanding officers and organization commanders to use greater effort to bring their commands to a state of proficiency, and at the same time enable the commandant of the corps to take the requisite steps to bring the corps to a higher state of efficiency. Owing to the absence of a large part of the Marine Corps on expeditionary service, the undersigned has made no personal inspections, but upon the return of the brigade now in Mexico to the United States it is deemed essential that he should inform himself, by personal inspection, of the needs of the various posts and organizations of the corps.

INCREASE IN CORPS.

3. In view of the varied and important character of the work performed during the past year by the Marine Corps in the way of expeditionary work, and especially that pertaining to Mexico, it has been necessary to practically deplete the barracks in this country, and it has also been almost impossible to keep the complements of ships up to the quota which has been established by the department. The requirements of the past year have fully and clearly demonstrated the absolute necessity for a very definite increase in both officers and enlisted men of the corps, not only properly to do the work which it is called upon to do, but also to maintain the high standard which the corps has previously attained and which the department requires it to maintain. The increases which are requested and which are tabulated herein are not based on imaginary or hypothetical contingencies or any desire to stimulate promotion or to create easier duty, but these increases are requested simply and solely because of the absolute necessity for them. The corps can not much longer remain efficient under the strain to which officers and men are now almost continuously subjected both at home and abroad, and it is feared that a continuance of the character of work which has been performed during the past year will result in physical degeneration, and such a condition is bound to result in decreased efficiency.

4. I have directed that the following increases in officers and men be incorporated in the estimates for the coming fiscal year:

Brigadier generals.....	2
Colonel.....	1
Lieutenant colonel.....	1
Majors.....	2
Captains.....	11
Captain, assistant quartermaster.....	1
Captain, assistant paymaster.....	1
First lieutenants.....	11
Second lieutenants.....	11
Paymaster's clerk.....	1
Sergeants major.....	3
Quartermaster sergeants.....	8

Quartermaster sergeants (pay department).....	10
First sergeants.....	9
Gunnery sergeants.....	16
Sergeants.....	62
Corporals.....	84
Drummers.....	4
Trumpeters.....	4
Privates.....	579

Total:

Officers.....	41
Clerk.....	1
Men.....	779

821

In addition to the foregoing, attention is invited to the fact that the department has frequently decided that the Marine Corps enlisted personnel should be one-fifth of that of the Navy, and that on such a basis the Marine Corps is at present 379 men short of this quota. In addition to the number required to keep up our quota I have asked for 400 men, not only because I understand from an authoritative source that it is the intention of the department to request the Congress to increase the enlisted personnel of the Navy by the moderate number of 2,000 men but also because I believe that these 400 men are absolutely necessary to provide the corps with a sufficient number of men to relieve the heavy strain to which they are now subjected and to maintain the force at the high standard of efficiency which I consider necessary.

5. The officers mentioned in the above list and their grades are not in excess of, but as a matter of fact are below, the quota necessary to provide a proper number of officers for the contemplated enlisted strength of the Marine Corps. It can be shown by statistics that even if not a single enlisted man be added to the corps the number of officers herein asked for would, if allowed, not only furnish no more officers than are necessary to properly officer the present enlisted strength but would still be below the quota which has been allotted to the same number of men in the Army.

6. Particular attention is invited to the recommendation that the grade of brigadier general be created for the Marine Corps. Not only is the Marine Corps a division commanded by a major general, and as such entitled to brigadier generals, but, furthermore, the duty to which the corps has in recent years been assigned has clearly demonstrated the necessity for officers of this rank in order that officers of proper rank may be assigned to the duty of commanding brigades. In recent years several brigades of from 2,000 to 4,000 men have been organized and sent out of the country, and recently there has been a brigade of over 3,000 men serving in Mexico in the field with the Army. All of the brigades which have been organized have been commanded by colonels, while the officers commanding the regiments of said brigades have also had similar rank. It must be apparent that such a condition of affairs is not only unmilitary but also does not tend to the greatest efficiency, for such an officer in command of the brigade is bound to be dissatisfied when he is ordered to command a unit larger than that to which his rank entitles him because of the fact that he has increased responsibility and yet does not receive any of the emoluments which go with such a command; and at the same time the officers who command the regiments must feel dissatisfied in

having as their commanding officer an officer of similar rank and in many cases their senior only by a few numbers. It is due to the strong esprit de corps that the efficiency of the corps has not suffered, but that consideration should not stand in the way of the corps getting the recognition to which its numbers and the duty to which it is assigned entitle it.

APPOINTMENT OF MARINE OFFICERS.

7. I can not too earnestly recommend that all vacancies which may now exist or may hereafter be created in the commissioned personnel of the Marine Corps be filled from graduates of the Naval Academy or from worthy noncommissioned officers of the Marine Corps. I unhesitatingly express the opinion that the best interests of the service would be served if the officers of the Marine Corps were appointed from graduates of the Naval Academy, for not only would the corps then receive officers who are better educated technically than those now admitted but also much better qualified physically, as the four years at the Academy result in the survival of the fittest. Recently there have been altogether too many young officers of the corps who, soon after their entry, have developed physical defects which render them unfit for the service. This in my opinion would not have occurred had graduates of the Naval Academy been selected. If the Naval Academy is, as we believe it to be, the best institution of the kind for the training of officers, I think there can be no doubt but that it should supply the commissioned personnel of the Navy and Marine Corps so far as it is possible to do so.

8. If it should be decided to so appoint graduates of the Naval Academy to the Marine Corps I think it would be advisable to so change the curriculum at the end of the second or third year of the academic course that certain midshipmen would be designated for probable appointment to the Marine Corps, and that during the remainder of their course they be required to specialize along lines which would better prepare them for their duty in the Marine Corps. It is further believed that if the staff corps of the Navy are hereafter filled as far as possible from graduates of the Naval Academy, in order to secure contentment the same laws which may be enacted as to selection, promotion, etc., with regard to such staff appointments should also be made applicable to the Marine Corps.

9. If, however, appointments to the Marine Corps be not made from graduates of the Naval Academy as above advised and the vacancies now existing be filled from civil life or from the ranks, it is advised that no appointments be made until Congress has been asked to enact legislation providing for the grade of provisional or acting second lieutenant, to serve as such for two years, during which time it is necessary for them to attend the preparatory school for officers of the Marine Corps. On their successful completion of the course they should be commissioned according to their standing at the school, or, in case their work has not been satisfactory, their service should be terminated.

SEA PAY FOR OFFICERS AND MEN.

10. Owing to the peculiar status as to service of the Marine Corps, and to that alone, I ascribe the unfortunate situation as to pay in which the Marine Corps is placed. Congress, after mature delibera-

tion and for reasons appearing to it to be fair, reasonable, and just, has provided certain increases in pay for officers and men of both the Army and the Navy under orders which render increased expenses obligatory, as, for instance, by the act of May 13, 1908 (35 Stat. L., 128), provision is made for an increase of 10 per cent in the pay of officers and men of the Navy serving on board vessels, and under the act of June 30, 1902 (32 Stat. L., 512), and by the act of May 11, 1910 (35 Stat. L., 110), provision is also made for increases of 10 per cent in the pay of officers and men of the Army serving beyond the limits of the States comprising the Union.

11. The peculiar status of the Marine Corps as a part of the naval service, and yet not a part of the Navy, was evidently overlooked in the act of May 13, 1908, referring to the Navy, and as a result officers and men of the Marine Corps serving on board vessels of the Navy who are subjected to all of the inconveniences and extra expenses to which officers and men of the Navy are subjected are nevertheless the only persons so serving who do not receive the extra compensation now authorized by the act of May 13, 1908. There can be no question that from both an equitable and a legal standpoint the officers and enlisted men of the Marine Corps serving on board ship should receive the extra compensation, and the department's favorable action thereon is desired, for I have no doubt that the Congress will see the justice of this claim and grant the increase requested, especially as a very small increase of appropriation is necessary, and because if granted the pay of the enlisted men of the Marine Corps at sea would still be from 10 to 15 per cent less than that of enlisted men of the Navy of similar grade.

NEW RATINGS AND PAY THEREOF.

12. Due to the activities of the last few years in work connected with advance base preparedness, the character of the work performed by the Marine Corps has very materially changed. In many particulars entirely novel conditions have confronted the corps, and while they have been most successfully met it has been accomplished by almost superhuman efforts on the part of the officers and enlisted men of the corps. It was no small problem for the officers and men to become trained in the multifarious technical duties which devolved upon the various elements of the fixed defense regiment of the advance base brigade. Highly technical knowledge, such as is possessed by specially trained enlisted men of the Army in the Artillery, Engineer, and Signal Corps, was absolutely necessary to successfully carry on this new work assigned to the Marine Corps. A large number of men have been educated and to-day are qualified to perform these highly technical duties, and this has been accomplished by extra study and work on their part, and yet they are receiving the same pay allowed enlisted men of the Marine Corps who are not doing this highly technical work. This condition is due to the fact that until recently the work to which the Marine Corps was assigned developed no real necessity for trained men in the special technical duties above referred to, and consequently there was no need of asking for legislation to establish special ratings for the men doing such work. As the men of the corps are now actually filling the positions and doing the technical work at a very materially reduced rate of pay from that received by enlisted men of the Army who

serve in the Artillery, Engineer, and Signal Corps, and who are doing the same class of work, it is not difficult to conceive that the enlisted men of the corps feel that they are being discriminated against and that they are entitled to the same compensation as is given to men performing similar duty in the Army.

13. It is also not difficult to see that unless legislation is enacted by which enlisted men of the Marine Corps receive similar pay to that received by men in the Army performing the same character of work dissatisfaction will result, and, furthermore, upon the expiration of their present enlistments these men, who have been trained in this work by the Marine Corps, will fail to reenlist in the corps, but will enlist in the Army, where a higher rate of pay awaits them for performing this same duty.

14. I trust that both the law and the equity of the case will appeal to the department, and that it will look favorably upon my recommendation, as embodied in the estimates, to the effect that enlisted men of the Marine Corps who perform special technical work should be placed upon the same pay basis as are men who perform similar work in the Army.

FIELD CLERKS.

15. The undersigned desires to renew the recommendation made in previous reports that the status of field clerks of the Quartermaster's Department be changed by the Congress, so as to place them on the same footing as to pay and allowances as paymasters' clerks of the Navy and clerks of the assistant paymasters of the Marine Corps. At present these clerks receive \$1,400 per annum and are stationed where their services can best be utilized for the efficiency of their department. Although civilians, they accompany expeditionary forces. For their own protection in time of war, and in order that they be under control of superior authority, it is considered that they should be given a military status and an appropriate uniform. Experience during the past year has demonstrated that the number authorized by law -four- is too small, and that a total of eight are required to perform the duties that should properly be assigned to them.

ENLISTED FORCE.

16. Gains and losses in the enlisted force during the year have been as follows:

Enlisted.....	2,701
Reenlisted from Marine Corps.....	854
Reenlisted from Army.....	327
Reenlisted from Navy.....	7
Joined from desertion.....	400
Prisoners restored.....	301
Total gain.....	4,590
Discharged.....	3,052
Died.....	46
Deserted (gross).....	1,091
Retired.....	15
Prisoners sentenced to dishonorable discharge.....	273
Total loss.....	4,477
Net gain.....	113

DISTRIBUTION OF FORCE.

17. Summary of distribution of officers and enlisted men June 30, 1914:

	Officers.	Enlisted men.
On shore duty:		
In the United States.....	1 105	2, 483
Outside United States.....	184	5, 460
On board ship:		
Receiving ships.....	1	154
Cruising vessels.....	51	1, 791
Total in service.....	341	9, 888
Allowed by law.....	346	9, 921
Shortage.....	5	33

¹ Includes 20 second lieutenants under instruction at the marine officers' school.

18. During the period in question the marine brigade in the Philippines has been disbanded, the battalion has been withdrawn from Panama, and the strength of the commands at Honolulu and Peking has been reduced, while the strength of the command at Guam has been increased.

APPOINTMENTS, RETIREMENTS, RESIGNATIONS, DEATHS, ETC.

19. On February 25, 1914, the undersigned was appointed major general commandant, vice Maj. Gen. William P. Biddle, retired upon his own application. In addition to the above there has been 1 appointment of a first lieutenant to the grade of captain assistant quartermaster, 20 appointments to the grade of second lieutenant, 2 retirements, 1 resignation, 2 dismissals, 1 honorable discharge, 2 deaths on the active list, and 4 deaths on the retired list.

CAMPAIGN BADGES, GOOD-CONDUCT MEDALS, ETC.

20. Since the last report the following campaign badges and bars have been issued to officers and enlisted men of the Marine Corps:

Twenty-one Civil War campaign badges, 16 Spanish campaign badges, 2 West Indies campaign badges, 10 China campaign badges, 13 Army of Cuban Pacification badges.

21. During the past year 614 good-conduct medals and 231 good-conduct medal bars have been issued to enlisted men of the Marine Corps.

22.

RECRUITING.

	Fiscal year ending June 30—	
	1913	1914
Total number enlisted.....	4, 042	3, 889
Decrease in enlistment of 3.7 per cent.		
Net desertions.....	913	856
Percentage of desertions to total borne on rolls.....	6.1	6
Decrease in percentage of desertions of 0.1 per cent.		
Apprehended and surrendered from desertion.....	262	400
Increase in apprehensions, etc., of 52.6 per cent.		
Dishonorable discharge, sentence general court-martial.....	177	185
Reenlisted from Marine Corps.....	723	854
Percentage reenlisting from Marine Corps.....	17.9	21.9
Total reenlistments (including those from Army).....	1, 044	1, 181
Percentage of reenlistments to total enlistments.....	25.8	30
Discharges by medical survey within 3 months from date of enlistment.....	21	20
Decrease in medical surveys of 5 per cent.		
Cost per recruit, including transportation.....	\$59.07	\$47.40
Cost per recruit, excluding transportation.....	\$38.07	\$28.57

23. During the past year the number of enlisted men employed in the recruiting service has been reduced from 203 to 120 and the number of recruiting stations from 126 to 101, effecting a saving in the items board and lodging and rentals of approximately \$4,300 per month. The cost per recruit has been reduced by approximately \$10.

24. In addition to keeping the Marine Corps enlisted to its legal authorized strength 625 men were enlisted for the Navy.

25. The reorganization of the recruiting service into three recruiting districts has resulted most favorably. During the past year this office, in cooperation with the Bureau of Medicine and Surgery and the medical examiners appointed by the Marine Corps, has continued collecting data in regard to the desirability of instituting some system of detecting the mentally unsound. While sufficient data have not as yet been collected to warrant the extension to the service at large of any system of examination to detect mental deficiency, yet the fact that men who are mentally deficient are usually attracted to military life and after entering the service are not amenable to discipline renders it of great importance to the service that some system of preventing the enlistment of men of this type be devised and adopted.

RECRUIT DEPOTS.

26. The recruit depots have now been in operation since November, 1911. The systematic instruction given to recruits has largely increased the efficiency of the personnel and eliminated in the early stages a large percentage of undesirables.

27. During the past year the course of instruction at the recruit depots at Norfolk and Mare Island has been carried out in accordance with the prescribed schedule, except that when expeditions have been organized it was necessary to include all recruits who had completed six weeks' service. Unfortunate as it is with the present number of men, whenever an emergency arises a reduction in the course can not be avoided. The regular course of instruction lasts 14 weeks, and all of this time is necessary to so train the recruit that he may be able to perform his duties in a fairly proficient manner upon leaving the depot. Since May 1, the course has been rearranged so that by the end of six weeks' service the recruit will have had the Army marksman's course in rifle firing and one week in camp for field maneuvers. This necessitates sending men to the range four weeks earlier than prescribed by the regular schedule and has resulted in a considerably smaller number of qualifications. This is unfortunate, as statistics show that the percentage of desertions among unqualified men is approximately three times as great as it is among men who have qualified as marksmen or higher. When the present emergency has ceased the regular schedule will be resumed.

28. During the fiscal year recruits have been under instruction as follows:

Norfolk.....	1,850
Mare Island.....	750

29. The closing of the recruit depot at Philadelphia and the concentration of all recruits on the Atlantic coast for training in the one depot at Norfolk has resulted in increased efficiency, but the desired

results can not be obtained so long as the depot is hampered by the lack of proper equipment and accommodations.

30. The depot at Norfolk is situated on what is called the "Schmoee Tract," a part of the navy yard not now used for industrial purposes but which it is understood will be required in whole or in part in the future development of the yard or when an additional dry-dock is authorized at that station. The recruits are quartered in tents throughout the year, and while this is good training for service in the field, during the winter months it causes great discomfort among men who are not inured to hardships, with an attendant increase in the number of desertions. There are no suitable buildings where indoor drills may be held in inclement weather, and the instruction has therefore been materially interfered with, particularly during the winter months, when the number of recruits is ordinarily at its maximum. Proper amusement rooms are not available and it has been extremely difficult to provide diversion for such a large number of men as must be assembled at a recruit depot. It has also been necessary for the recruits to be thrown more or less with the older men, and until their course of training is completed this is considered most undesirable, not only on account of the spread of contagious diseases to which recruits are extremely liable, but also on account of the training of the recruits. While a considerable number of buildings of a temporary nature have been erected from the current appropriations and the conditions materially improved during the past year, yet the depot at best is a makeshift and the desired results can not be obtained until proper and adequate buildings are provided.

PHYSICAL TRAINING.

31. The Swedish system of physical training, which has been adopted for the naval service, has been used throughout the year. One officer with an experienced assistant has been engaged during this period in giving instructions in this system at the stations on the Pacific coast and at Honolulu and Guam. The use of the dynamometer to detect physical weaknesses in applicants for enlistment is now being tried out at the recruit depot at Norfolk, but the tests have not been in operation for a sufficient length of time to determine their value.

TARGET PRACTICE.

32. *Qualifications.*—The number of men in the Marine Corps who have qualified as marksmen or better has steadily increased, as shown by the following tables:

	October.				June 30, 1914.
	1910	1911	1912	1913	
Expert riflemen.....	309	435	446	663	596
Sharpshooters.....	873	1,665	2,067	2,863	2,749
Marksmen.....	723	784	634	811	757
All grades.....	1,910	2,884	3,147	4,307	4,102
Per cent of total enlisted strength qualified in the various grades.....	0.209	0.318	0.335	0.434	0.415

The apparent decrease from October, 1913, to June 30, 1914, is due to the fact that during the entire present target season a large percentage of the enlisted strength of the corps has been on expeditionary duty and consequently has been afforded no opportunity to engage in target practice.

33. *Ranges*.—The same situation exists as in former years regarding ranges. The Army authorities, upon request, have courteously placed the Fort Barry range at the disposal of the Marine Corps. The use of this range was also granted by the Army during the month of October, 1913. Owing to the absence of the major portion of marines ordinarily attached to posts in the United States on expeditionary duty, the accommodations at the Marine Corps rifle range at Winthrop, Md., have proven ample for the needs of the corps during the present target season. In connection with the proposed abandonment of the rifle range at Winthrop it is recommended that this range be not abandoned until a new range has been purchased or a range already in existence has been secured for use by the Marine Corps.

34. *Competitions*.—The Atlantic Division and the Marine Corps competitions were successfully held at Winthrop, Md., on October 16-17, 1913. The former was won by Pvt. Carl H. Sampson with an excellent score of 899, while the latter was won by Sergt. Eugene L. Mullahy with a score of 894. The usual medals were awarded, one officer being awarded a bronze medal in the Atlantic Division competition for his standing. The course prescribed for departmental competitions in the Army was fired in both cases.

35. The Philippines Division competition was held on the range at Maquinaya, P. I., on January 13-14, 1914. This match was won by Corpl. Elmer E. Greenlaw with a score of 855. The usual medals were awarded, two officers being awarded silver medals for their standing. The course for departmental competitions in the Army was fired.

36. On October 16, 1913, the Elliott trophy was competed for by teams representing the various marine barracks on the Atlantic coast. This trophy was won by the team representing Winthrop with a creditable score of 2,732.

37. On September 29, 1914, the Bay State trophy was competed for by teams representing the naval prisons at Portsmouth, N. H., and Boston, Mass., and the marine barracks at Portsmouth, N. H., Boston, Mass., and New York, N. Y. The team representing the last-named post won the trophy with a score of 2,615.

38. *Rifle-team squad*.—A rifle-team squad was assembled at Winthrop, Md. This squad, consisting of approximately 20 men under command of First Lieut. Calvin B. Matthews, proceeded on August 21, 1914, to Sea Girt, N. J., to take part in the matches of the New York State Rifle Association, the New Jersey State Rifle Association, and the national divisional individual and team matches.

39. The work of the squad was most creditable in all the matches at Sea Girt. A team from the squad won first place in the following matches:

The Dryden match.

The New Jersey State two-men team match.

The team also won second place in the national divisional team match.

The following individual events were won by members of the squad:

The Hayes match (Sergt. Ollie M. Schriver).

The Palma individual match (Corpl. Noah G. Reeves).

The Roe match (Corpl. James F. Coppedge).

The Spencer match (Corpl. James F. Coppedge).

The Sea Girt championship (Corpl. James F. Coppedge).

The national divisional individual match (Pvt. Charles C. Terry).

40. *Miscellaneous*.—The open championship for North China was held at Tientsin, China, on April 13, 1914. This rifle match was won for the fourth consecutive year by the marines. First Sergt. Frederick Wahlstrom won the match, and Sergt. James J. O'Neil took second place.

SERVICE AFLOAT.

41. With the exception of the marine detachments for the *Texas* and *New York*, which were assembled for preliminary training at the marine barracks, Annapolis, Md., the policy of having men sent to that station for training preliminary to service with the Atlantic fleet has not been carried out, owing to the absence of all available men on advance base work or on expeditionary duty in Mexican waters.

42. Except on the Asiatic station, marine detachments have been withdrawn from the smaller ships, and in this connection attention is invited to the fact that these ships are usually stationed in those parts of the world where local troubles are most apt to occur, and where a marine detachment under an officer available for immediate landing might be most desirable. In view of this it is suggested for the consideration of the department that it might be well to adopt the policy of utilizing some of the medium-sized ships as well as light-draft gunboats for this duty and of placing on board large marine detachments, varying in size from a company to a small battalion, supplementing such organizations by the regular complement of the engineer force and by a sufficient number of the other naval branches, to care for the ships in case it became necessary to land the marine detachment. It is suggested for the consideration of the department that if a sufficient number of marines had been available to enable this policy to have been carried out during the last year, it would have relieved a considerable number of battleships from this duty and would have enabled them to have carried on their training preparatory to war in a more satisfactory manner. It is believed that the officers and men of the Marine Corps can be trained to carry on most of the duties of the ship, and to this end the recommendation submitted last year is renewed, that junior marine officers serving afloat be assigned duty as watch officers, in addition to their duties in connection with the detachments.

43. It is of the utmost advantage to the naval service to have at its disposal a corps of officers and men who are trained equally well for service on board ships of the Navy or on shore in landing operations. In order that as many as possible of the officers and men of the Marine Corps be kept in close touch with the naval service and with service on board ship it is intended to reduce the tour of duty afloat for the Marine Corps to 2 years for officers and to not less than 18 months nor more than 2 years for men, a small proportion only of the men to be relieved at any one time, so that the greater part of

the detachments afloat will always be composed of well-trained men who are thoroughly familiar with the ships to which attached.

44. Attention is also invited to the fact that it has been impossible to provide marine detachments for ships of the Atlantic and of the Pacific reserve fleets, and as these ships are kept in reserve to enable them to be placed in full commission at short notice the lack of officers and men for such detachments is a serious disadvantage to the Marine Corps.

ADVANCE BASE.

45. In addition to its ordinary and usual duties and certain expeditionary work the Marine Corps has during the past year been employed on at least two very important duties—the advance base work at Culebra and the landing at and the assisting in the seizure of Vera Cruz. Owing to the novel character of the work connected with the advance base, as well as its important and far-reaching effect upon the entire naval service, it is considered well worthy of special comment.

46. The officers and men engaged in this work during the last winter were for a comparatively short time stationed at the navy yard, Philadelphia, Pa., where at first they were instructed so as to educate both officers and enlisted men in the theory of their new duties, and subsequently elaborate practical exercises were held, both in the navy yard and on the Delaware River, in all of the various duties which were to be performed by the fixed defense regiment.

47. In January, 1914, a brigade commanded by Col. George Barnett, United States Marine Corps, and consisting of two regiments of about 59 officers and 1,700 enlisted men, was dispatched on the *Hancock* and the *Prairie*, with directions to establish an advance base on the Island of Culebra, Porto Rico. The program of the maneuvers, as outlined by the commander in chief of the Atlantic Fleet, had for its purpose the demonstration of the ability of the officers and men of the corps to put into practice what had been taught them at the Advance Base School. An examination of the report made by the commander in chief shows that the program of exercises was extended in character and the work of great value to officers and men. Taking into consideration the fact that this was the first expedition of this character conducted by the Navy and Marine Corps, the work done was of a most satisfactory nature, and on its completion called forth very strong commendation from the commander in chief of the fleet in a report to the department, to which I take much pleasure in inviting especial attention.

48. I believe that advance base work is the most important duty for which marines can be trained, not only because of the possible necessity which may arise for actually seizing and holding an advance base, but also because the training obtained in preparing for this duty is of inestimable value to the corps in the ordinary expeditionary duty which it is so often called upon to perform. In fact it has been learned that to the character of the training resulting from advance base work there is due much of the successful work which the Marine Corps brigade now serving in Vera Cruz has performed.

49. The maneuvers in Culebra last winter demonstrated beyond peradventure that in order to do successful work of this character

a yearly appropriation is necessary in order that the proper material may be procured, and, after being procured, to keep it up to date and in proper condition. A modest appropriation only will be necessary for this purpose, and, when made, should be expended under the direction of the Secretary of the Navy on the joint recommendation of the chief of the Bureau of Ordnance and the major general commandant of the Marine Corps.

50. In connection with this reference to advance base it may be proper to state that an impression seems to prevail that advance base work is purely a Marine Corps matter. This is an error, as there can be no doubt but that advance base work is essentially a naval matter in which the entire service is most deeply interested, and while the execution of the work is placed in the hands of the Marine Corps it is nevertheless necessary for successful results that it be given earnest cooperation by and coordination with the various branches of the naval service. It is hoped that every facility will be provided the corps for the continuing of this work, and if so, steps should be taken not only to perfect the outfit but also to devote as much time as possible to the training of the men in this work.

TRANSPORTS.

51. The General Board has recommended that a brigade organization be maintained in the Marine Corps; that next spring there be even more extensive advance base work than that of last year; and that a brigade of at least 2,500 men with all the necessary guns, mines, and equipment be sent to the West Indies. At the present time there are available but two transports, the *Prairie* and the *Hancock*, and these, even when crowded would be unable to carry the number of men above mentioned. It will be found necessary to send a large number of men as passengers on battle-ships, and this should be avoided, for it is not only detrimental to the interior economy of the battleship but it is also coupled with severe discomfort and inconvenience for the men. It is a matter of record that the Marine Corps has in past years on expeditionary duty undergone privations to which it ought not to be subjected if it can possibly be avoided. Whilst prior conditions have been somewhat alleviated by placing the *Hancock* in commission, yet this has not marked a sufficient improvement. When the transport appropriated for by Congress which is now in course of construction is completed a relief will be granted if the present transports are still available, but it is deemed proper, however, to invite attention to the fact that both the *Prairie* and the *Hancock* are fast nearing the end, and it is therefore deemed proper in view of the fact that it takes some time to design and build a transport, to most urgently recommend that the Congress be asked to provide for an additional transport similar to the one now being constructed.

EXPEDITIONS.

52. Whilst during the past year the number of times the Marine Corps has been ordered to perform expeditionary duty has not been as many as in previous years, yet the scope of work performed by it has been much larger.

53. In January, 1914, 1 officer and 56 men, comprising the marine detachment of the U. S. S. *South Carolina*, were landed at Port au

Prince, Hayti, for the protection of the American legation and American interests.

54. A regiment consisting of 30 officers and 845 enlisted men, which was subsequently known as the Second Regiment of the Advance Base Brigade, sailed on the *Prairie*, from Philadelphia November 27, 1913, for Pensacola, Fla., where it went into barracks. They were reembarked on the *Prairie* January 3, 1914, and sailed for Culebra, Porto Rico, and took part in the advance base work there. This regiment returned to Pensacola February 15, 1914, when 14 officers and 329 men were reembarked on the *Prairie* for Vera Cruz. Sixteen officers and 516 men embarked on the *Mississippi* for Vera Cruz on April 21, 1914.

55. A regiment consisting of 24 officers and 810 enlisted men, subsequently known as the First Regiment of the Advance Base Brigade, sailed from Philadelphia on the *Hancock* on January 3, 1914, for Culebra. On the completion of the maneuvers it sailed to Pensacola, Fla., thence to New Orleans, Tampico, and arrived at Vera Cruz, Mexico, April 22, 1914.

56. The Third Regiment, consisting of 33 officers and 861 enlisted men, embarked on the *Morro Castle* at Philadelphia April 23, 1914, and proceeded direct to Vera Cruz, where it arrived on April 30, 1914.

57. The Fourth Regiment was assembled at Bremerton, Wash., and at Mare Island, Cal., embarking on the *South Dakota*, the *West Virginia*, and the *Jupiter* on April 18, 24, and 22, respectively. Of this regiment there were about 24 officers and 900 enlisted men on the *South Dakota* and *Jupiter* and 4 officers and 200 enlisted men on the *West Virginia*. This regiment remained on these vessels on the west coast of Mexico until July 3, 1914, when it went into camp at North Island, San Diego, Cal., where it now is.

58. The above expeditionary work required a large number of men, and as a result the barracks in this country have been practically depleted and the men who have been left have been compelled to perform the most arduous duty. The above expeditionary work shows conclusively the absolute necessity for an increase of officers and men of the corps.

59. Subsequent to the end of the fiscal year and prior to the submitting of this report an additional regiment, the fifth, consisting of 27 officers and 702 enlisted men, was organized under command of Col. Charles A. Doyen for duty in Santo Domingan waters.

VERA CRUZ.

60. When conditions in Mexico became grave, and action on the part of our Government was contemplated, arrangements were made by these headquarters for the mobilization of as many officers and men of the corps as it was possible to detail. The Second Regiment, consisting of 14 officers and 329 men, was embarked on the *Prairie* at Pensacola March 5, and arrived at Vera Cruz on March 9; of said regiment 16 officers and 516 men remained at Pensacola until April 21, when they were embarked on the *Mississippi*, and arrived at Vera Cruz on April 24. The First Regiment, consisting of 24 officers and 810 men, left New Orleans for Tampico on the *Hancock* April 15, 1914, and remained there until they were landed at Vera Cruz on April 22, 1914. The Third Regiment, consisting of 33 officers and 861 enlisted men, was assembled at Philadelphia and embarked on

the *Morro Castle*, a chartered vessel, sailing April 23, 1914, and landing at Vera Cruz April 30, 1914. In addition to the foregoing regiments, which were mobilized from those serving ashore in this country, a battalion consisting of 20 officers and 632 enlisted men was assembled from the ships of the North Atlantic Fleet and landed at Vera Cruz on April 21, 1914. From the 21st day of April until the present time the marines have been ashore at Vera Cruz, at first serving under the Navy and latterly under the Army.

61. I deem it my duty, and at the same time a great pleasure, to bring to the department's attention the high character of work performed by the marines in Mexico. The satisfactory work which has been done is not only shown by the official reports which have reached these headquarters, but also from information which shows it to be practically the unanimous opinion of the officers of the Army and the Navy who were present in Mexico that the marines had lived up to their high standard of efficiency. Attention is invited to the report of Rear Admiral F. F. Fletcher, United States Navy, on this subject, and also to the number of letters of commendation addressed by the department to officers and men of the corps for their distinguished services in Mexico.

AVIATION.

62. Two officers and 6 men are now on aviation duty in connection with the Navy aeronautic section, and as soon as additional officers and men are available they will be detailed to this duty in accordance with the policy of the department.

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GEORGE BARNETT.

REPORT

OF THE

SECRETARY OF THE INTERIOR.

NOVEMBER 14, 1914.

SIR: Three things of unusual purport have marked the life of this department during the past year—the passing of the Cherokee Nation, the opening of Alaska, and the advancement of a series of measures aimed to promote the further development of the West. These things are apparently unrelated, yet they have made an appeal to me as alike illustrative of the newness of our country, the novelty of its problems, and the responsiveness of our Government. There is such a significance in these policies, they evidence a faith so robust, as to give them distinction. And if it is true that “in America each is to have his chance,” the events of this year are well designed to give a sure confidence to the Alaskans and those who look to that Territory as a land of opportunity, to the Indians and those who are concerned as to their future, to the home maker and miner of the West and all whose interests are allied with theirs.

OF THE INDIAN.

On the 1st of last July the Cherokee Nation ceased to exist. This act was the culmination of a treaty promise made over 80 years ago, extended by statute, and at last placed within administrative discretion. The word of the white man has been made good. These native and aspiring people have been lifted as American citizens into full fellowship with their civilized conquerors. The Cherokee Nation, with its senate and house, governor and officers, laws, property, and authority, exists no longer. Surely there is something fine in this slight bit of history. It takes hold upon the imagination and the memory, arouses dreams of the day when the Indian shall be wholly blended into our life, and at the same time draws the mind backward over the stumbling story of our relationship with him.

The people of the great Sequoyah have lost their identity, yet—and this is a fact that all do not know—there are still several thousand of these American citizens for whom the United States stands to a greater or less degree *in loco parentis*. We hold our hands upon the property and the private concerns of approximately one-

fifth of these "free people." This seems to be an anomalous situation and prompts at once the inquiry, Has this Government a policy with relation to these people and the others of their race? We have had three centuries of contact with the Indian. Do we now know where we are leading him and what our own purpose is with regard to him? Have we aught that may be openly declared as a definite and somewhat immediate aim toward which we can work with clear and unwavering purpose? If we have such a policy it should be stated. And this is for love of the Indian himself, who daily asks the question, "What is my future to be at the hands of the white man?"

A BEWILDERED PEOPLE.

That the Indian is confused in mind as to his status and very much at sea as to our ultimate purpose toward him is not surprising. For a hundred years he has been spun round like a blindfolded child in a game of blindman's buff. Treated as an enemy at first, overcome, driven from his lands, negotiated with most formally as an independent nation, given by treaty a distinct boundary which was never to be changed "while water runs and grass grows," he later found himself pushed beyond that boundary line, negotiated with again, and then set down upon a reservation, half captive, half protégé. What could an Indian, simple thinking and direct of mind, make of all this? To us it might give rise to a deprecatory smile. To him it must have seemed the systematized malevolence of a cynical civilization. And if this perplexed individual sought solace in a bottle of whisky or followed after some daring and visionary Medicine Man who promised a way out of a hopeless maze, can we wonder?

Manifestly the Indian has been confused in his thought because we have been confused in ours. It has been difficult for Uncle Sam to regard the Indian as enemy, national menace, prisoner of war, and babe in arms all at the same time. The United States may be open to the charge of having treated the Indian with injustice, of having broken promises and sometimes neglected an unfortunate people, but we may plead by way of confession and avoidance that we did not mark for ourselves a clear course, and so, "like bats that fly at noon," we have "spelled out our paths in syllables of pain."

HIS STATUS.

There are some three hundred thousand Indians in the United States. This grand total includes all who are of Indian blood or who have been adopted into the tribes. The census figure of 1910 shows an Indian population of 304,950, as contrasted, it may be noted, with a population in 1860 of 254,300. These are for the

most part wards in chancery, the Government being the chancellor. They live in large part on reservations, which are little more than expanded and perhaps somewhat idealized orphan asylums. They have lands aggregating in extent 109,150 square miles, or a territory equal to that of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Kentucky, and Virginia, and worth, by rough estimate, \$600,000,000. Over two-thirds of this land is now held as individual farms, the unallotted or tribal lands being estimated as worth less than \$200,000,000. If an appraisement were made of the full value of the timberlands and of the oil and coal lands, and added to this was the value of the herds and personal property of the Indians, it is probable that they would be found to have a wealth approximating \$900,000,000. In moneys, the Treasury of the United States has trust or tribal funds approximating \$50,000,000, while in the banks throughout the country we have deposited to the credit of individual Indians under our control something over \$18,000,000.¹

The function which this Government is performing for these Indians is to care for their personal welfare, supervise their business affairs, improve their property, hold their moneys, give education to their children, care for their sick, protect them from their enemies, and insure them against starvation. This surely is doing much for a people who are richer on the average than the majority of our own people. And, we ask, must this governmental activity persist? Must this burden always rest upon the people of this country? Is it for the benefit of the Indian himself that it should continue?

¹ The general allotment act of 1887 was the first step toward the setting aside for each Indian of a tract of land which he could develop by his own efforts and on which he could construct a home for himself and for his family.

Each of the 41,698 members of the Cherokee Tribe received an allotment of 110 acres of the average allottable lands valued originally at \$325.60. The average Cherokee family may be said to number four persons, which would give to it 440 acres of land. The Choc-taws and Chickasaws, the Creeks and the Seminoles have also received allotments and their tribal funds are being divided.

The Osages are probably the wealthiest people in the world. The average wealth of the Osage Indian is \$9,579.85, and 2,230 Osages each received approximately 657 acres of land as allotments. The average income of the Osages from oil and gas royalties is \$690.89. For an average family of four this would make an annual income of approximately \$2,700, to say nothing of the large income from the lands allotted to them. Some few families have an income of \$12,000 per year.

The individual wealth of the Indian necessarily depends upon the value of his individual allotment; as, for instance, in the Creek Nation, one of the Five Civilized Tribes, the great oil fields have brought wealth to those Indians so fortunate as to hold allotments within the oil territory. The following cases are examples of the royalties for 1914 received by Indians of the Creek Nation from oil: Samuel Richard, \$94,000; Jeannetta Richard, \$90,000; Seeley Alexander, \$57,000; Lessey Yarbola, \$73,000; Eastman Richard, \$93,000; Thomas Long, \$35,000; Ella Jones, \$31,000; Nancy Yarbola, \$29,000; Johnston Wacoche, \$27,000; Miller Tiger, \$23,000.

Some of the Bad River Indians have received as high as from \$14,000 to \$16,000 for the timber cut from their allotments.

On the other hand, we must not forget that many of the Indians have lands which are little better than sand hills, that even though these tribes have vast herds of sheep and the wealth of the tribe seems large, when divided pro rata shares it would be but a small sum which could quickly be expended for subsistence.

There are those who say that it should not last a single day. The American conscience, however, our sense of justice, our traditions, in fact, will not permit the adoption of a drastic course that would cast the Indian upon a world for which he is ill prepared. Yet I am of the opinion that it would be better, far better, to sever all ties between the Indian and the Government, give every man his own and let him go his own way to success or destruction, rather than keep alive in the Indian the belief that he is to remain a ward of the Government. The advocates of the sink or swim policy may be reckless. The advocates of the almshouse policy are surely doing harm.

Is there, then, no way out? Must we go blunderingly on without goal and without policy?

HIS CHANCE.

The way out is gradually and wisely to put the Indian out. Our goal is the free Indian. The orphan-asylum idea must be killed in the mind of Indian and white man. The Indian should know that he is upon the road to enjoy or suffer full capacity. He is to have his opportunity as a "forward-looking man." This is not my dictum, for the Government has been feeling its way toward this policy for nearly 40 years. This is the rationale of the whole of our later congressional policy, of the liberality of Congress toward the education of the Indian, of the allotment system, of limitations fixed upon disposition of property. If the course of Congress means aught it means that the Indian shall not become a fixture as a ward.

It is the judgment of those who know the Indian best, and it is my conclusion after as intimate a study as practicable of his nature and needs, that we should henceforth make a positive and systematic effort to cast the full burden of independence and responsibility upon an increasing number of the Indians of all tribes. I find that there is a statute which significantly empowers the Secretary of the Interior to do this in individual cases. That authority is adequate. And as soon as the machinery of administration can be set in motion I intend to use such authority. If year by year a few from each of the tribes can be made to stand altogether upon their own feet, we will be adding to the dignity of the Indian race and to their value as citizens. To be master of himself, to be given his chance—this is the Indian's right when he has proven himself. And all that we should do is to help him to make ready for that day of self-ownership.

THE REMAKING OF THE AMERICAN.

Viewed in this light, the Indian problem is incomparably larger to-day than it was when the Cherokees were gathered up from the Southern States and sent into the unknown across the Mississippi. In 1830 the problem was how to get the Indian out of the way.

To-day the problem is how to make him really a part of the Nation. This blend of wisdom, dignity, and childishness, this creature of a noncommercial age, has been brought into a new day when all must live by conforming to a system that is as foreign to him as the life of the Buddhistic ascetic would be to us. Slowly through a century and more of torturous experience he has come to see that it is not our purpose to do him harm; but he must learn to find his place in an economy that antagonizes every tradition of his ten thousand years of history. How, then, are we to get into the mind of this soldier-sportsman the fact that the old order has passed away and that the gentleman of to-day earns his right to live by his usefulness—that the American can not be a man and a ward at the same time?

It is a strange thing indeed that we should be concerning ourselves so largely and spending so many millions each year for the remaking of the people who are the truest of Americans. It shows how anxious to be just and willing to be generous are our people. They feel with a quick conscience how cruel it would be to introduce this primitive man into a harsh, competitive world of business with a code of its own more foreign to him than that of the Bushido; too much, they fear, like pitting Little Boy Blue against Shylock in a trade. Let us frankly state the fact—there is such a thing as being too unselfish, and this the Indian too often is, for he has not gained a forecasting imagination. His training has not given him the cardinal principle of a competitive civilization, the self-protecting sense. It is not instinctive in him to be afraid of starving to-morrow if he is generous or wasteful to-day. And work? Why work if not necessary? Is it not, as an Osage chief once reprovingly said to me, is it not the hope of every American that he may some day be a gentleman who does not work?

We are bent, then, upon saving the Indian from those who would despoil him until the time comes when he can stand alone. And that time comes when he has absorbed into his nature the spirit of this new civilization that he has become part of. This is certainly a revolution we are expecting—an impossible revolution in some natures—the substitution of a new standpoint for one long taught by fathers and grandfathers. Truly such a transformation is not to be worked like some feat of legerdemain, by a turn of the wrist. Bayonets can not do it; money can not do it. We can force men to work. We can keep them without work. These two methods we have tried with the Indian, and they have failed in leading him toward the goal of responsible self-support. Adaptation to new environment comes from education, through experience. We therefore have the task of introducing a new conception into the Indian mind. This is not a thing that can be done wholesale. It becomes an individual problem, and our hope lies in schools for the young

and in casting more and more responsibility upon the mature, and letting them accept the result.

What should the test be in passing upon the fitness of one who is to be sent out into the world? Plainly his ability to handle himself, to care for himself so that he will not become a charge on the community. To be a rich Indian is not a qualification, for his wealth may indicate, and generally does, nothing more than good fortune. In the land lottery some drew prizes and some blanks. Nor should the degree of blood be the test, nor education. For many of those who are wisest in counsel and most steady in habits and sturdy in character are uneducated full bloods. The man who can "do" for himself is the man to be released. And he is the man who thinks not in terms of the Indians' yesterday but in terms of the Indians' to-morrow. One whose imagination can take that leap and whose activities will not lag behind. It is to be remembered that we are not looking for an ideal Indian nor a model citizen, but for one who should not longer lean upon the Government to manage his affairs.

METHODS.

There are many thousand Indians in our charge who are entirely self-supporting, capable, thrifty, farsighted, sensible men. And singularly enough these are most often found among those tribes which were most savage and ruthless in making war upon the whites. Some of these are indeed so farsighted that they do not wish to enjoy full independence because their property would then become subject to taxation. Others are attached by a tribal sentiment and by the natural conservatism of the Indian to existing conditions. Still others are held to governmental control in part because of the entanglement of their tribal affairs. The Government will not do its duty toward itself or toward these Indians until men of this class are fully released.¹ There is a

¹ EXTRACTS FROM TYPICAL LETTERS FROM INDIANS.

"You can't make the Indian independent by doing his business for him."—A Kickapoo Indian.

"Indians ought to live like men—not like boys."—A Colorado Ute.

"We will never better our condition while we are wards of the Nation."—A Yakima Indian.

"As long as we have money in the U. S. Treasury we will not do much work, and work is our salvation."—An Oklahoma Kiowa.

"Government should not listen to the plea of a few backward Indians who are opposed to progress and are contented to live at the expense of Government and of industrious Indians."—An Iowa Sac and Fox.

"My children attend public schools; I pay taxes; why should I be under Government supervision?"—An Oregon Indian.

"The Government can not all the time take care of the Indians."—A Wisconsin Indian.

"Indians now hampered by delays, regulations, and red tape * * * and these things have made them discouraged."—A Tulalip Indian.

"No greater blessing could come to the Indian than to be compelled to think for himself."—An Oklahoma Seminole.

second class, made up of those willing to work but not knowing how, and a third class, of those who know how but have no tools. For these there is help—the teacher farmer for the one and a small loan in the form of tools for the other. There are those, too, for whom it is too great a jump to pass from hunting to farming, but who can herd cattle, and for these the Government is providing herds for their ranges. Congress has been liberal in its appropriations for these things, and with a stable policy and administrative efficiency these Indians can be gradually lifted into usefulness, full self-support, and into entire independence. Then there is the “proud” red man who idly clings to the traditions of his race and talks of its past with such dignified eloquence, declaring in one glowing moment against the injustice of requiring service from those who once owned the continent and in the next sentence pleading for rations. This man is half brother to him who has degenerated under the orphan-asylum system into a loafer. My confidence is that for all these there is some hope, for most of them much.

But from what has been already said it will be perceived that in the direction of Indian affairs I believe it wisest to give our chief concern to those who are willing to work, who show evidence of a rudimentary ambition, and to convert the Bureau of Indian Affairs into a great cooperative educational institution for young and old, reducing to the minimum the eleemosynary side of its work and its trust functions. It sounds trite, but it has its significance here, that it is not so important to conserve the wealth of a people as to develop their capacity for independence.

For the young the schools¹ are doing much, especially the day schools on the reservations. By way of answer to those who are troubled at the neglect of the Indian it may be noted that since 1863 we have expended \$85,000,000 in the education of the Indian. Beginning with \$20,000 a year, the annual appropriation for this purpose now reaches nearly \$4,500,000. Those schools are most useful in which emphasis is laid upon the industrial side of life. There are no better schools, I am well advised, than many of our reservation schools, where each child is taught the rudiments of learning and to

¹ It is reported that there are 84,229 Indian children of school age. Of these 6,428 are ineligible for school, leaving 77,801 eligible for school. Of this number 22,775 children are in Government schools, as follows: In the 37 nonreservation boarding schools conducted outside of the Indian country there are enrolled 10,857 children. In the reservation boarding schools situated on the various reservations there are 9,700, and in the Government day schools on the reservations, which resemble closely the ordinary district schools of the States, except that they offer industrial training, there are 7,218 children. Of the children enrolled in mission schools there are 1,379 in mission boarding schools under contract with the Government and 3,450 in mission schools without contract. There are enrolled in the public and private schools 25,924 Indian pupils of which the Indian Office has record. This would leave 15,906 Indian children eligible for school privileges but not reported as being in school. Of this number probably 6,000 in the Navajo and Papago country are without school facilities, but the greater part of the remainder are enrolled undoubtedly in public schools, but not reported.

be useful in practical things—reading, writing, and arithmetic; how to plow and sow, hoe and harvest; how to build a house and shoe a horse, or cook a meal, make a dress and nurse a sick man or animal.

In one thing we are short—the art of inducing ambition. This largely depends upon the genius of the teacher to fire the imagination of the pupil, for, after all, the true teacher is an inspirer, and the only thing he teaches his people is to want something. That is the first step in all civilization. We need teachers in the Indian Service, men and women with enthusiasm and with sympathy, not learned but wise. We are to control less and to help more. Paternalism is to give way to fraternalism. The teachers we need are helpers, farmers and nurses, who may not know how to write ideal reports but do know how to trust and secure trust. There is no way by which an Indian can be made to do anything, but experience justifies the belief that there are many ways by which he can be led.

To turn the Indian loose from the bonds of governmental control, not in great masses, but individually, basing this action upon his ability to watch his steps and make his way, not in any fool's dream that he will advance without tripping, but in the reasonable hope that he will develop self-confidence as he goes along; to destroy utterly the orphan-asylum idea, giving charity only to the helpless and in gravest emergencies; to teach the Indian that he must work his way, that the Government will no longer play the part of Elijah's raven; to convert the young to our civilization through the creation of ambitions and desires which the blanket life can not satisfy; to organize each group of Indians into a community of sanely guided cooperators, who shall be told and taught that this Government is not to continue as an indulgent father, but as a helpful, experienced, and solicitous elder brother—this program we are adventuring upon. It may be inadequate, but it is surely a long step on the road which the Cherokees took.

To carry out this policy there should be continuity of purpose within Congress and within this department. The strength of the administration should be turned against the two enemies of the Indian—those who, out of sentiment or for financial reasons, keep the Indian's mind turned backward upon the alleged glories of other days and the injustices that have been done him, and those who would unjustly take from him the heritage that is his. The demands now being urged that reservations shall be broken up to make way for white men who can use the lands to better advantage should be resisted, unless it can be shown that the Indians under proper stimulus will not use these lands, or that by the sale of a portion the Indians would be enabled to make greater

use of the remainder. The Indian is no more entitled to idle land than a white man. But speculation is not use; and the Indian must be regarded as having the first call upon the lands now his, at least until white men are willing to surrender their lands when not used. Idle Indians upon idle lands, however, must lead to the sale of the lands, for the pressing populations of the West will not long look upon resources unused without strenuous and effective protest, and the friend of the Indian who would give him his chance and would save for him his property is he who keeps in mind the thought of his future instead of his past, and that future depends upon his willingness to work.

DEVELOPMENT OF THE WEST.

In my report of last year I suggested a series of measures for the development of western resources which I thought consonant with the advancing spirit of our time and would meet the demand of the West. There were five of these measures, one providing for a Government railroad system in Alaska; an Alaskan coal-leasing bill; a new reclamation act; a bill providing for a new method of opening and developing coal, phosphate, oil, and potash fields, and a water-power bill. All of these measures have passed the House of Representatives, and the first three also passed the Senate and by your approval have become law. I feel that it is conservative to say that by the passage of these bills the Federal Government has given to the more remote States greater assurance of its interest in their welfare than has been given for many years.

ALASKA.

Hope has again come to the heart of the waiting Alaskan in the promise of a railroad that shall pierce the mountains of the coast and reach the great interior of this beautiful and promising land. The commission of engineers appointed by you to survey possible routes, which has with its force spent the summer in Alaska, has already returned, and will in a short time submit to you its plans and surveys upon which may be based a conclusion as to the route and character of the railroad to be built. Four coast points have been considered as possible termini: Cordova, from which now runs the Copper River and Northwestern Railroad, which could be extended northerly through the Chitina Valley to the Tanana; Valdez, from which now runs an excellent Government road, extending through the Chitina Valley to Fairbanks; Portage Bay, on the west coast of Prince William Sound, where no settlement now exists but which could be connected with Turnagain Arm by tunnel and so on

northerly through the Susitna Valley to Fairbanks; Seward, from which now extends the Alaska Northern for 72 miles to the eastern end of Turnagain Arm.

Although the bill authorizing this work did not become law until March 12, 1914, the Commission of Engineers had been appointed, their subordinate engineers and other employees had been selected, their horses, supplies, boats, and outfits had been bought, and they were in Alaska and at work by the earliest day in summer when their work could be undertaken.

Congress supplemented its railroad bill by the passage of another act of no less significance, a bill providing for the leasing of the great coal fields of Alaska. As this is virtually the first bill to pass Congress authorizing the leasing of any of our resources, it may be well to outline its provisions. It first provides for a survey of the coal lands of Alaska, preference to be given to the Bering River, Matanuska, and Nenana fields. These fields would doubtless supply the needs of the far West for many years if made accessible. The Nenana field is some 30 miles from Tanana River and could feed the great interior, while the Matanuska is but a short distance from Cooks Inlet on the coast, and the Bering River field is near Controller Bay and the city of Cordova. In the two best fields (Matanuska and Bering River) a reservation is to be made for the Government, not alone to supply the needs of our ships, but to be operated in the event that the price of coal is raised to such a figure by monopoly as to make this of public value. The surveys are to be in 40-acre blocks, and the leases are not to exceed 2,560 acres, which is the average coal operation of the United States. As a coal mine under modern conditions is much more than a tunnel or a shaft, requiring a plant costing from a quarter to half a million dollars, it was necessary to make the acreage large enough to justify such an expenditure. The leases are to be awarded through competitive bidding or otherwise, under general regulations made by the Secretary of the Interior, with a minimum royalty payable to the Government of 2 cents a ton and an annual rental of from 25 cents to \$1 per year per acre applicable on the royalty. This last provision as to rental is to make it onerous to hold land undeveloped. The leases are to be for not more than 50 years, subject to renewal on new terms.

The utmost care was taken by Congress to guard against monopolization of the fields. Railroads are not permitted to hold more of these lands than will supply their own needs. Leases may be transferred only with governmental consent. No one may be a shareholder or otherwise have an interest in more than one holding. And for violation of its general and specific prohibitions criminal penalties may be imposed. Provisions against waste and for care in the

operation of the mines are required in each lease. The safety and welfare of the miners are safeguarded, and an eight-hour day for underground workers is specified. Wages shall be paid twice a month, and the company store as a compulsory base of purchase is frowned on. The miners are to be insured the fair and just weighing of the coal mined, and other measures may be provided in the leases which may be needed "for the protection of the interests of the United States, for the prevention of monopoly, and for the safeguarding of the public welfare."

Leases may be forfeited by appropriate proceedings in court for noncompliance with the provisions of the lease or of general regulations, and the lease may provide for enforcement of other appropriate remedies for breach of specified conditions therein.

To care for the strictly local and domestic needs for fuel, provision is made that a limited license or permit, for 10 acres and running for not more than 10 years, may be granted to any person without payment of royalty. As Alaska contains many scattered coal veins easily accessible from mines and towns this is a provision that it is thought will make for general relief. Having provided in this manner here most generally stated against those conditions which have arisen within the United States and which have threatened Alaska, Congress has restored the coal lands of Alaska to the world's use.

Just as Congress is advancing funds for the Indians with which to buy cattle and horses and plows, and thus make their other assets available and eventually make them self-supporting, so Congress also by this bill and by its Alaskan railroad bill takes a long step toward making Alaskan resources so available as to pay Alaska's cost of development.

As in my report of last year, I again suggest that there is but one businesslike and adequate way of dealing with the removed affairs of so great a territory, and that is by the creation of a new piece of administrative machinery, which I have designated descriptively as an Alaskan development board. Alaska should be administered as a unit by men upon her soil. In a report sent to Congress I have shown the confusion and curious admixture of official functions which now obtain as to Alaskan matters—a veritable Babel of official voices. There is no reason that appeals to me against placing all the internal resources of that Territory under the supervision of a commission of presidential appointees, who will give a constructive note to this work and advance the interests of Alaska by prompt and farsighted administration of the policies which Congress shall declare. There is to be a large movement toward this new land in the next few years; it has, indeed, already begun. To gather into one sheaf the powers now so widely scattered among various depart-

ments would make for the efficient management of the Government's interests and give form to the faith that the Federal Government is to have a continuing policy of concern for the affairs of the Territory.

THE NEW RECLAMATION ACT.

The chief purpose of this law is to make it easier for the pioneer farmer on a reclamation project to bring his land into full yielding. The time for the payment of the farmers' indebtedness to the Government was extended from 10 to 20 years. Thus, by reducing the annual installments paid for water rights, the settler may be enabled to level his land, secure the necessary farm implements and cattle, and in general given an opportunity to take from the land enough to pay for his water rights and live. The Government had placed its projects at points distant from markets. This arose from the desire to bring within such projects as large a body of Government land as possible, which could not be found near well-settled sections. The result was the attraction of men of small means, whose hopes far exceeded their realizations. By passing this extension act Congress remedied a mistake it had made 12 years before, when the original bill was enacted. A "hard" Government could have forced payments upon many projects within the time originally fixed. It could have had its bond. But it would not have been a wise Government, for it would have held back the development of the projects and reduced to a minimum their service to a country which with its growing population needs every acre put to use.

There are other provisions of this act which will make for the fuller use of the land, not the least important of which is one which it is hoped will compel cultivation of private holdings and no longer permit their being held for speculation.

It had been my hope at this time to lay before you a plan or plans for the greater extension of the work of reclaiming the arid West. Some of these States richest in possibilities, which without doubt will in the future maintain dense population, must await the day of further irrigation. It is a misfortune to them that war has come upon Europe and closed the sources of those streams which reach even into the farthestmost and most arid parts of America. In conjunction with the governors of the Western States there has been formed an interstate irrigation commission. This body contains men of sagacity and high purpose, who have at heart the developing of a practicable plan of financing other great reclamation projects, to be constructed, perhaps, by the cooperative effort of the States with the Federal Government. Such plans, however, are not for this day.

And this leads to a consideration of those bills for western development which have passed the House but not the Senate—the general leasing bill, so called, and the power bill. Through these the wise development of the natural resources may be secured, and the reclamation fund which is annually diminishing with the sale of the public domain may, particularly through the general leasing bill, secure a much needed replenishing.

POWER AND GENERAL LEASING BILL.

These measures commended themselves so heartily to the favor of the House of Representatives that they were both passed without a roll call. Just as the Alaska bills provide for the improvement of Alaska out of Alaskan resources, so these bills aim to make available for the upbuilding of the West through irrigation whatever moneys may come out of their enactment. The reclamation fund in the first instance is to have these moneys and later such revenue is to be divided in equal portions between the States whence the resources come and the Federal Government. Had there been such a law during the past 10 years it has been estimated that the United States could have had for reclamation work not less than \$50,000,000 as a 10 per cent royalty upon the oil produced from Government lands.

These measures come from a real need. Existing law is not fitted for the uses to which it is put. Water power will not be developed under a revocable permit law. Capital asks more insurance against arbitrary action. The West needs water power. There are many sites held in reserve which should be used. Development, however, will not take place until a law is passed which will give such promise of safety to the investor as a reasonable man may ask. The Ferris bill will meet this need, for it gives a 50-year lease of the Government site or other needed Government lands. At the end of that period, however, the Government may take over the plant, paying for the right of way, water rights, and lands only their actual cost and for all other property (excepting franchise or good will) its reasonable value. This provision saves to the people the invaluable right of taking back their own if experience proves it to be wise to do so. This bill does not give to the engineer-promoters who represent great syndicates of capital all that they wish, for they ask a permanent right to lands or their use practically without condition. I take it, however, that the day for granting such favors has passed. It is the judgment of men of wide experience that this bill will bring development where power is needed.

The general leasing bill is called for chiefly by the existence of certain absurdities in our laws—making the placer law applicable to

the entry of oil lands, for instance. The oil developers of this country, who are among the most venturesome of modern miners, need the protection of a law against their own kind. It is hard to know when one has a good title, and oil men would welcome the enactment of this measure. As for coal, the bill permits a lease to be made of 2,560 acres, but does not repeal the existing laws under which coal land may now be purchased from the Government. The Government is to-day prosecuting men for violating the law in taking up, through "dummies," more than the 160 acres allowed. The real defense of these men is that 160 acres is not enough for a modern mine, and they are right. Perhaps if men are given an opportunity to lease the lands they will not risk the embarrassments of prosecution. And the Government might appear more fair in giving the alternative of purchasing a small amount or leasing more.

The only other minerals covered by this bill are phosphates and potash. Of the former we know that our supply in the West is most extensive and altogether untouched. Some day these phosphates will be as valuable as water power, for each year the western land calls more strongly for the restoration of its substance. For potash in commercial quantities we are now making a strenuous hunt.

There can be no argument for these measures or against them which was not made before the House Committee on the Public Lands or the House itself, and their passage commends them to the mind as expressive of a practical policy which the country will find increasingly advantageous.

ADMINISTRATIVE EFFORT.

While it is matter of the largest concern that the Government should be wise in determining what its policies for the future shall be, it is, I respectfully submit, a matter of no less moment that its administration of the law that already is shall be responsive to the needs of the people. I would therefore present to your eye in succinct form a picture of the effort that this department is now making to so administer existing law as to stimulate confidence in the Government and a cheerful acceptance of its policies.

It can not be unknown to you that there is throughout the country, more especially in the Western States—which because of their ambition are naturally impatient of obstruction—a very real fear of what is called "the bureaucracy of Washington." This is said to be a "system" or organized machine, the spirit of which is to oppose action or to effect negative action. It is visualized as either cynical or malevolent, altogether out of sympathy with those who needs must come to the Government for some form of help, and so wound

round and round with the red tape of officialdom as to resemble a barbed-wire entanglement which, if not absolutely impregnable, is only to be passed through after much suffering and toil. It is a matter of no immediate concern how much basis there is for this belief. The presence of the belief makes it a real problem, and the destruction of the belief a necessity, if the Government itself is to remain an object of pride and its beneficent efforts understood and appreciated. How sincere the attempt made by the men and women of this department to put at rest any such notion is attested by the statements that follow of the things accomplished, the plans made, and the policies inaugurated by our various bureaus during the past year.

Almost every line of this straightaway record has to me an uncommon and vital interest, for it tells of the making of homes, the saving of lives and fortunes, the rise of industries, the struggle after hidden resources and the measuring of those known, their preservation, and their utilization. To shorten the time in which a patent may be secured, either for an invention or a homestead, may not be as picturesque an achievement as to build a railroad or divert a river onto a parched plain, but they measure alike in the effort to so serve this Government that "in America each is to have his chance."

THE GENERAL LAND OFFICE.

1. Reduced the delay in acting upon homestead final proofs by 50 per cent.

2. Surveyed more than 17,000,000 acres of public lands at a cost of less than 4 cents an acre for field work, the lowest record of cost for such work ever made.

3. Lessened delays in handling right of way, power, and Carey Act matters from former period of 6 or 8 months to about 30 days.

4. Eliminated approximately six months' delay in acting on applications for surveys.

5. Administered the exclusion from national forests and the restoration to entry of nearly 4,000,000 acres of public lands.

6. Issued statement of unappropriated public lands by counties in July instead of October.

7. Issued 73,999 patents covering 14,391,071 acres of land, as compared with 63,496 patents covering 12,678,076 acres in 1913.

8. Approved over 4,900 forest and reclamation homesteads and miscellaneous entries, as against 2,800 in the preceding year.

9. Patented 10,000,635 acres under the homestead laws, or 2,680,577 acres more than in 1913 in addition to 1,145,483 acres of commuted homestead.

10. Patented 6,645,046 acres under the three-year homestead law, as against 3,500,388 acres in the year before.

11. Examined 80,653 original homestead and desert-land entry papers, as compared with 67,274 examined in the previous year.

12. Restored to entry 516,000 acres of land embraced in fraudulent or erroneous entries.

13. Investigated and reported on more than 22,000 cases in the field.

14. Won 160 civil suits for cancellation of patents.

15. Conducted business of 99 local land offices, including payment of salaries and commissions of registers and receivers, for \$36,775.46 less than in previous year.

16. Made effective elimination of 831 withdrawals for administrative stations in national forests, opening thereby to forest homestead entry 150,698 acres.

17. Reorganized procedure for surveys within railroad land-grant limits, making possible the survey of about 1,250,000 acres during the field season of 1914, as against about half that amount during the previous field season.

THE GEOLOGICAL SURVEY.

1. Completed detailed geological surveys covering 12,000 square miles, including 180 square miles in Alaska, and reconnoissance geological surveys of 57,000 square miles in the United States and 6,500 square miles in Alaska, the total territory surveyed geologically during the year being as great as the combined area of Denmark, Switzerland, and Greece.

2. Made topographic surveys covering 23,000 square miles in the United States, 6,000 square miles in Alaska, and 342 square miles in Hawaii, or an area more than the Netherlands and Belgium combined.

3. Continued stream gauging at 1,400 stations in 39 States, Alaska, and Hawaii.

4. Classified 47,000,000 acres of public lands, an area larger than the New England States, including the following items:

a. Designated as nonirrigable and open to entry under the enlarged homestead act, 33,000,000 acres in 12 States, or enough land to make 100,000 homesteads of 320 acres each.

b. Examined and classified 2,400,000 acres of Indian lands and 1,700,000 acres of withdrawn phosphate lands.

c. Restored to entry nearly 9,000,000 acres of land of all kinds previously withdrawn for classification, including 8,275,000 acres of coal-land withdrawals, of which 1,300,000 acres were appraised and made available for purchase as coal lands, 188,000 acres determined not to contain oil, 260,000 acres classified as nonphosphate, and 90,000 acres decided not to be essential to water-power development.

d. Caused the withdrawal of a total of 752,500 acres, including 209,000 acres of oil lands, 170,000 acres of phosphate lands, 92,000 acres as possibly containing potash, 183,000 acres reserved for water-power sites, and 75,000 acres of public water reserves.

5. Made its annual census of mineral production through correspondence with about 90,000 mineral producers.

THE BUREAU OF PENSIONS.

1. Returned to the Treasury \$7,658,572.87 of the amount appropriated by Congress for the payment of pensions.

2. Reduced the total expenditures for pensions from \$174,171,660.80 in the preceding year to \$172,417,546.26.

3. Saved nearly half a million dollars in the total cost of maintenance and expense of the pension system, including salaries.

4. Reduced the number of employees of the bureau by 145 persons without the removal from the office of a war veteran or soldier's widow.

5. Saved to pensioners about a million dollars formerly spent for the execution of vouchers, by abolishing the voucher system of paying pensions.

6. Improved the method of paying pensions so that each pensioner receives his check on the exact day when due, instead of waiting in some cases from 10 to 15 days as formerly.

7. Reduced the number of pending claims from 83,581 to 27,521, and made it possible to give almost immediate attention to all communications received.

THE RECLAMATION SERVICE.

1. Stored enough water in its various reservoirs to make a lake 50 miles long, 15 miles wide, and 10 feet deep.

2. Diverted 4,000,000 acre-feet of water (a stream equal in volume to the Hudson River where the Mohawk enters it) and irrigated 700,000 acres on 16,354 farms, an area equal to that of Rhode Island. These farms provided homes and occupation for 61,253 people and produced crops valued at \$15,732,000, or about \$25 per acre.

3. Began and completed 479 miles of irrigation canals, 115 miles of drainage and waste-water ditches, 80 miles of irrigation and drainage pipe line, 536 bridges, and 1,022 culverts; laid in dams and other irrigation works enough concrete to build more than 2,000 miles of city sidewalks 6 feet wide and 3 inches deep; manufactured 500,000 barrels of sand cement; constructed 3 miles of dikes and 27 miles of railroads, 17 miles of electric-transmission lines, 45 miles of telephone lines, 36 miles of wagon roads, and 120 buildings.

4. Maintained and operated 7,130 miles of irrigation canals, which, if in one continuous canal, would reach in an air line from Palm Beach, Fla., to Fairbanks, Alaska., and back again; 548 miles of drainage and waste-water ditches, 19 miles of standard-gauge railroad, 374 miles of electric-transmission lines, 2,180 miles of telephone lines, 733 miles of wagon roads.

5. Excavated 14,000,000 cubic yards of earth and stone.

6. Protected 144,000 acres of irrigated lands against water logging by construction of drainage ditches and underground drains.

7. Brought 110,813 acres of additional lands under irrigation, and made 60,000 acres more susceptible of irrigation.

8. Opened 4,000 acres of land to homestead entry under the reclamation law.

9. Initiated cooperation between Reclamation Service and States of Oregon, California, and Washington in construction work.

10. Inaugurated system of cooperation with Department of Agriculture to promote better farming on projects, for the study of farm credits, and promotion of organizations for improving grading, branding, and marketing of farm products.

11. Initiated new policies of supervision under reorganization of service, by which heads of five divisions comprise a commission for management of service.

12. Cooperated with governors of irrigation States in creation of Interstate Irrigation Commission.

13. Reduced the ratio of general expenses from an average of 9 per cent during the preceding three years to less than 6 per cent during the calendar year 1914.

14. Introduced a policy of publicity, keeping the water users informed of how their money is being spent, and of cooperation with the water users in the determination of new policies affecting their projects.

THE INDIAN OFFICE.

1. Promoted Indian stock raising and improvement of stock breeds by the purchase of 267 stallions, 1,048 bulls, 12,272 heifers, 2,510 steers, 3,738 cows, 2,110 mares, 469 rams, 513 sheep, 670 horses, and 67 mules, at a cost of nearly a million and a half dollars.

2. Began an aggressive campaign for stamping out trachoma and tuberculosis and improving health conditions, including the construction of many hospitals.

3. Initiated a more strenuous movement for encouraging industry and self-support among Indians. In this effort the Indians are being discouraged from leasing their grazing lands and urged to farm and use their own lands. Tribal herds have been started, and 450 farmers have been employed to teach farming; horse racing and dancing have been discouraged and agricultural and industrial

exhibits urged at Indian fairs; new sawmills have been purchased and installed, others have been rebuilt and several repaired, and farming implements have been furnished to Indians to aid them in establishing themselves as farmers.

4. Increased the Indian revenues from rentals of oil and gas lands on the Osage Reservation in Oklahoma by competitive bidding for leases, and generally by the enforcement of modern methods for preventing waste in the drilling and operation of oil and gas wells.

5. Approved allotments of 452,921 acres of land to 4,066 Indians; sold 90,768 acres of land for \$1,652,815; approved 1,148 applications for patents in fee to lands aggregating 152,404 acres.

6. Inaugurated an aggressive campaign for the protection of the property of Indian minor children in Oklahoma to correct a deplorable condition theretofore existing; suggested rules of probate procedure which were adopted by the courts and have been enforced with gratifying results.

7. Formulated a plan for the protection of the water rights of the Indians, insuring wise and economical use of the tribal funds in connection with irrigation expenditures.

THE BUREAU OF MINES.

1. Invented and applied methods for extracting radium from the carnotite ores of Colorado and Utah with greater efficiency than is attained by any foreign producer of radium and at an indicated cost of less than one-third the present selling price.

2. Developed the fact that the annual value of the by-products wasted in present methods of making coke in this country amounts to \$75,000,000, and conducted investigations looking to the use of better methods of making coke and the upbuilding of by-product industries.

3. Saved \$200,000 or more to the Government in purchase of coal through the use of the specification method of buying coal on the basis of its content of moisture and ash and its heating value, and the selection of fuels best adapted to certain power plants.

4. Through an expenditure of not more than \$15,000 in investigations and demonstrations, has been instrumental in saving natural gas valued at \$15,000,000 during the last 18 months.

5. Conducted investigations and experiments with petroleum with a view to increasing efficiency in the petroleum industry, in which preventable wastes and losses in the development of oil fields and in transporting and storing oil are fully \$50,000,000 yearly.

6. Carried on tests for perfecting "permissible" lamps, electric motors and switches, and other safety devices, which, if generally used in mines, can not fail to greatly reduce the number of fatal and other accidents.

7. Designed and demonstrated devices for arresting dust explosions in coal mines.

8. Was first in bringing about the use of "permissible," or relatively safe, explosives, of which more than 25,000,000 pounds were used last year in many gaseous and dusty coal mines, with a corresponding reduction of the danger of explosions.

9. Rescued men after disasters; trained over 8,500 miners in rescue or first-aid methods; was instrumental in greatly increasing the number of rescue and first-aid corps equipped and maintained by mining companies. Nearly 25,000 miners have received this training, and more than 12,000 sets of rescue apparatus have been purchased by private companies. (More than 3,000 men were killed and more than 100,000 men were injured in the mining and metallurgical industries of this country during 1913. The money loss from these accidents is estimated at not less than \$12,000,000, and hundreds of millions of dollars were lost or wasted from not employing efficient methods of mining and treating ores and minerals.)

THE BUREAU OF EDUCATION.

1. Made a comprehensive study of recent developments in higher education in England, Scotland, Ireland, and Wales; of the preparation of teachers for secondary schools in Germany, France, and Great Britain; of the methods of teaching English and sciences in American high schools, and of standards of colleges and secondary schools in the United States.

2. Made and published a digest of all school legislation and judicial decisions affecting schools and education in the United States within the last three years, and began a complete digest of all the school laws of all the States.

3. Prepared and published bulletins on health teaching and on the better care of health of school children, and a bulletin on rural schoolhouses and grounds, and gave direct assistance to State and city school officers and college boards of education in all parts of the country in planning schoolhouses and grounds.

4. Visited 500 rural schools, participated in 100 rural-school conferences, studied rural high schools and agricultural schools in 15 States, visited rural schools in England, Scotland, and Ireland, and studied the rural-school systems of these countries.

5. Investigated 400 schools for negroes in eight Southern States, and studied elementary and secondary education for negroes in the South.

6. Made a comprehensive study of kindergartens in the United States, the relation of kindergartens to the elementary schools, the results of kindergarten work, and the preparation of teachers in kindergarten training schools.

7. Made a study of illiteracy among the foreign population of three States, and is devising means for the elimination of illiteracy among the adult population.

8. Provided schools for the natives of Alaska, cared for their health, and gave relief from the effects of storm, flood, and epidemic diseases.

9. Increased its activities by organization of divisions for the study and promotion of home education, for instruction in civics and citizenship, and for the education of immigrants, and made provision for divisions for the study and promotion of agricultural education, education in trades and industries, education in home economics and for home making, and for horticultural education and home gardening directed by the schools in cities, towns, and manufacturing communities.

THE NATIONAL PARKS.

1. Replaced military troops with civilian rangers in several parks.

2. Admitted automobile to parks where condition of roads makes motoring safe.

3. Gave better protection to park timber from fire through co-operation with Forest Service.

4. Cooperated with Good Roads Office of the Department of Agriculture in beginning of comprehensive surveys by experienced engineers for systems of roads and trails through parks, at reduced cost of construction.

5. Made sanitary inspections of the larger parks, and began work looking to protection from pollution of drinking water, proper disposals of sewage, and enforcement of hygienic regulations necessary to protect the health of visitors.

6. Improved hotel and camp facilities for visitors in several parks, and made a 20 per cent reduction in transportation rates from the western entrance of Yellowstone Park.

7. Increased efficiency and reduced cost of superintendence by the appointment of a general superintendent and landscape engineer for all the parks, and the gradual superseding of superintendents of the several parks with park supervisors at lower salaries.

THE PATENT OFFICE.

1. By change of method has enabled an applicant to secure a patent in two-thirds of the time that formerly was necessary. In order to do this the office has acted upon 19,873 more old cases and 1,368 more new ones than had been acted upon during the preceding year.

2. From January 1, 1914, to November 14, 1914, granted 4,703 more patents and sent to issue 11,257 more applications than in the same period of 1913.

3. Substantially reduced the accumulation of pending applications.

4. Increased the surplus receipts of the office for the fiscal year from \$158,030.81 in 1913 to \$240,856.43 in 1914.

5. Accomplished these results without increasing the office force.

Respectfully yours,

FRANKLIN K. LANE,
Secretary.

The PRESIDENT.

ABSTRACTS OF REPORTS OF BUREAUS AND OTHER ADMINISTRATIVE UNITS OF THE DEPARTMENT.

OFFICE OF THE ASSISTANT ATTORNEY GENERAL.¹

The following table shows the receipt and disposal of matters that are docketed or recorded, but does not account for numerous matters of which no formal record is kept:

Work of office of Assistant Attorney General.

	Public lands.		Pensions.		Miscellaneous. ¹	Summary.
	Appeals.	On rehearing.	Appeals.	On rehearing.		
Pending Oct. 1, 1913.....	2,144	123	805	3	230	3,305
Received to Oct. 1, 1914.....	2,774	497	6,580	73	16,953	26,877
Total.....	4,918	620	7,385	76	17,183	30,181
Disposed of.....	3,276	520	4,211	75	16,959	25,041
Pending Oct. 1, 1914.....	1,642	100	3,174	1	224	5,140

¹ Under "Miscellaneous" are now grouped matters, such as "Disbarments," "Opinions," etc., heretofore separately classified.

Although it appears from the foregoing that the total number of arrears on October 1, 1914, is 5,140 in contrast with 3,305 the previous year, this is entirely due to the remarkable increase in the number of appeals filed in pension cases—a matter discussed under the caption of "Appeals in pension and bounty land claims."

The gratifying feature suggested by the figures lies in the marked reduction of arrears in the appeal cases affecting public lands, wherein a gain of over 500 has been made. On October 1, 1913, there were 2,194 cases pending on appeal and 123 on rehearing. On October 1, 1914, 1,642 were pending on appeal and 100 on rehearing.

This curtailment is in part due to an increase in the number of cases decided. The fact that during the past year the office has been relieved of the review of abstracts of title in connection with the work of the Reclamation Service has contributed somewhat to this accom-

¹ The designation of this officer was changed to Solicitor by the act approved July 16, 1914 (Public No. 127).

plishment, but it is largely due to the change in the method of disposing of certain cases—cases where the decision of the Commissioner of the General Land Office has been found so carefully and fully to set out the essential facts and the law applicable as to make it unnecessary to do other than to affirm the judgment formally. A thorough and cautious examination of such cases here makes this plan feasible. The saving accomplished is in the elimination of a great deal of transcription and other work entailed by the former method of an extended opinion in each case. This saves much time both to the clerical and law force and renders easier the problem of keeping the work of the small stenographic force current with that of the attorneys.

During the year 17 cases against the department in the courts sitting in the District of Columbia, in which the Assistant Attorney General has been charged with the defense of the Secretary or his officers, have been disposed of successfully save in two cases, and in one of these petition for rehearing is pending. Two of these cases were in the Supreme Court of the United States, 4 in the Court of Appeals, and 11 in the Supreme Court of the District. Fifteen cases are now pending in the Supreme Court of the District and 2 in the Supreme Court of the United States.

GENERAL LAND OFFICE.

The total area of public and Indian lands originally entered and allowed during the fiscal year ended June 30, 1914, is 16,522,852.12 acres, an increase of 655,629.67 acres as compared with the area entered during the year 1913.

The area patented during the fiscal year is 14,391,071 acres, an increase of 1,712,995 as compared with the fiscal year 1913. Of the above area, 10,000,635 acres was patented under the homestead law, an increase of 2,680,577, not including homesteads—22,129 patented as soldiers' additional entries.

The decrease in receipts and increase in area disposed of is caused by the decreased number of homestead entries commuted to cash and the increased number on which proof was made under the three-year act of June 6, 1912, the area patented under this act in 1913 being 3,500,388 acres, as against 6,645,046 in 1914, an increase of 3,144,658, or nearly double.

The total cash receipts from the sales of public land, including fees and commissions on both original and final entries and sales of old Government property in the local offices, for the fiscal year 1914 were \$4,256,102.96 (1913, \$4,287,540.67), a decrease of \$31,437.71. Miscellaneous receipts were as follows: From sales of Indian lands, \$1,844,802.77 (1913, \$2,118,469.34); depredations on public lands, \$21,913.85; leases, power sites, etc., act of February 15, 1901, \$2,681.28; copies of records, plats, etc., made at General Land Office,

\$17,180.66, and at 13 surveyor generals' offices, \$5,686.11; making the aggregate cash receipts of this bureau during the fiscal year 1914, \$6,148,367.63 (1913, \$6,955,504.81), a decrease of \$807,137.18. This decrease is caused partly by the fact that the reclamation water-right charges are now collected by the fiscal agents of the Reclamation Service, and partly by the fact that the sales of Indian lands were less, and by decrease of commutation homestead entries.

The total expenses of district land offices for salaries and commissions of registers and receivers and incidental expenses during the fiscal year ended June 30, 1914, were \$853,698.60, a decrease of \$36,775.46. The aggregate expenditures and estimated liabilities of the public land service, including expenses of district land offices and surveys, were \$3,028,187.32, leaving a net surplus of \$3,120,180.31 of receipts over expenditures.

During the year the field service has accomplished satisfactory results in its field work. The number of cases investigated and reported on was practically the same as last year, notwithstanding that the force was somewhat reduced. This speaks well for the efficiency of the service.

The biggest task confronting the field force is the investigation of oil lands in the withdrawn areas in California. The results achieved have not been as great as could be desired, due to the limitation upon the force under the available appropriation. However, the preliminary work of general investigation and searching of records has reached such a stage that it is expected that during the next fiscal year tangible results will be shown and this situation will be well in hand. During the latter part of the year the force in that field was considerably augmented, and if needed it is planned to make a further increase.

The hearings in the Alaska coal cases remaining undisposed of are rapidly nearing completion, and it is expected that all the pending hearings will be disposed of during November.

A notable innovation in the method of conducting hearings has been inaugurated during this year. Previously the bulk of the hearings were held during the winter season, when field work could not be prosecuted vigorously. Now a special agent has been designated as a hearings officer to conduct hearings on the part of the Government. This results in hearings being held at all times of the year, so that the convenience of the claimants is met as nearly as is possible. As a result of this complaints of delays in securing hearings have ceased.

Public surveys.—The superiority of the direct system for field work has been thoroughly demonstrated in the result of the past year. During the field season of 1913—that is, the latter part of the fiscal year of 1913 and the first half of the fiscal year 1914—the field work for over 17,000,000 acres of surveys and resurveys was performed at

a cost for such field work of less than 4 cents per acre, including Alaska. The actual cost in money for field work under the direct system is not only materially less than under the contract system, but the work is done in the field in a more thorough, systematic, and permanent manner, rendering subsequent examination in the field unnecessary and obviating disputes and controversies over the question of satisfactory compliance with contracts. Substantial reductions in expenditures have been effected and greater expedition secured in perfecting surveys made on the application of settlers.

The necessity for an early extension of the public surveys in Alaska is noted, especially that portion of the Territory embracing the coal fields, and to this end a special appropriation is recommended.

Marked attention has been given to surveys within railroad grants. By expediting the submission and examination of accounts submitted by the field force engaged in such surveys a much greater advantage is secured under the existing appropriations than has heretofore been accomplished.

Restoration of lands withdrawn or reserved.—The act of September 30, 1913, authorizing the employment of suitable methods for the restoration to entry of lands previously withdrawn or reserved, has proved extremely advantageous both to the Government and to the public. Actual home seekers are given an opportunity to select or choose places for their future homes in advance of the time when the owners of scrip and others who do not intend immediately to occupy or make use of the lands may accomplish their intended appropriations.

National forests.—During the last fiscal year 15 national forests have been reduced and 4 enlarged under the act of June 4, 1897 (30 Stat., 36), and the Caribou National Forest, in Idaho, has been enlarged by the act of April 21, 1914 (Public, No. 87). There are now 183 national forests, embracing 185,321,202 acres, of which area approximately 88 per cent is public land. The decrease in area of national forests since the beginning of the fiscal year is 1,295,446 acres.

Homestead entries in forest reserves.—Notices of restoration were issued during the past year in accordance with the provisions of the act of June 11, 1906 (34 Stat., 233), in 2,580 lists, by which approximately 255,000 acres of agricultural lands in national forests were opened to settlement and entry under the homestead laws. In the previous year approximately 365,000 acres, included in 3,620 lists, were opened. Up to June 30, 1914, approximately 1,405,000 acres have been restored under said act of 1906. There are 777 lists pending for action. During the past year 2,685 homestead entries were made of lands in national forests.

Desert-land entries.—The material questions to be considered in connection with desert-land entries are the right to the use of water,

its application to the land, and the sufficiency and permanency of the supply. It follows that as the available supply of this valuable commodity is absorbed these questions become more complicated, and closer and more careful field and office inquiry must be made before decision can be reached that title has been earned. During the past fiscal year 2,127 desert-land entries were patented, embracing 346,794.74 acres of land; 15,170 proofs of annual expenditures were examined, and 2,783 applications for extension of time within which to submit proofs and 573 assignments of desert-land entries or portions thereof were considered.

Soldiers' additional applications.—There is no decrease in the number of claims filed under sections 2306-2307 of the Revised Statutes. Five hundred and twenty-two new cases were filed during the past year as against 491 of the preceding year. Many of these claims are for small fractional rights, and entail an amount of labor entirely out of proportion to the value of the land involved. A 1-acre right requires as much work as a right for 120 acres, and calls for correspondence with the War Department, the Auditor of the War Department, and the Pension Bureau in order to establish the identity of the soldier with the entryman. Under the decisions of the courts the present legal status of the additional right is equivalent to that of scrip locatable upon any lands subject to homestead entry, and this character of the claim is taken advantage of by the scrip dealer, rather than the soldier or his heir, who usually assigns the right for a very small part of its ultimate value in the hands of the dealer.

The Commissioner suggests that the repeal of the law at the present time would not operate to the serious detriment of the original grantee, and would relieve the department of a very serious burden that is not carried for his benefit.

Indian allotments.—During the fiscal year 6,769 Indian allotments were disposed of by approval and the issuance of trust patents. The approvals for 1913 aggregated 5,243, and for 1912, 2,417. Those disposed of during the past year were chiefly tribal or reservation allotments, but included 800 Turtle Mountain selections made under the provisions of the act of April 21, 1904 (33 Stat., 189). In addition, nearly 2,000 patents in fee were issued to Indians and to purchasers of allotted lands.

Logging on ceded Chippewa lands.—There were logged on ceded Chippewa lands, Minnesota, under the act of June 27, 1902 (32 Stat., 400), during the past year 85,799,120 feet of timber, valued at \$763,915, as against 89,616,153 feet, valued at \$771,689.81, the preceding year. During the 11 years since logging operations began on said ceded Chippewa lands there have been logged 1,178,395,167 feet of timber, valued at \$8,316,099.07. The amount of timber cut already exceeds the original Government estimates by over 270,000,000 feet.

Railroad grants.—During the past year railroad and wagon-road selections were received in the General Land Office amounting to 451,619.47 acres, and during the same time 855,374.20 acres were patented, an increase of patented area over selections submitted of 403,754.73 acres. Last year the excess of patented area over selections submitted was but 275,474 acres. During the year 77 railroad patents were issued, as against 22 the year preceding.

Railroad rights of way.—Under the act of March 3, 1875 (18 Stat., 482), and the Alaska right of way act of May 14, 1898 (30 Stat., 409), 473 applications were received during the past year, as against 255 the year previous. During the year 576 were disposed of, as against 274 the year preceding.

Rights of way for irrigation and other purposes.—"All other rights of way" show a decrease in the number received, but a large increase in the number disposed of. There were 666 applications received, as against 1,133 last year; 1,197 cases were disposed of, as against 898 of the year previous. This class of work is practically current.

State selections.—Indemnity school-land selections aggregating 177,294.68 acres were approved during the past fiscal year, 484,571.64 acres in 1913, and 147,988.16 acres in 1912. Under grants made to the several States for specific purposes approvals aggregated 924,921.27 acres, as compared with 114,086.10 acres in 1913 and 33,292.46 acres in 1912; totals—1914, 1,102,215.95 acres; 1913, 598,657.74 acres; and 1912, 181,280.62 acres.

Reclamation under the Carey Act.—The Commissioner furnishes a general summary of the operations of the Carey Act down to the present time. He calls attention to the excellent purpose underlying this legislation and some of the difficulties that have been encountered in accomplishing its full beneficent intention. Commenting on the situation as it now stands, he suggests that it would seem as a first step some means should be provided for taking up and rehabilitating and completing those feasible projects which have been partially constructed, but which for various reasons are now at a standstill, and suggests that from the experience of the Government, both in the Land Department and Reclamation Service, the underlying principle of any plan adopted should be one that shall have the effect of guaranteeing the integrity of the project; that is to say, sufficiency and reliability of water supply, good engineering, economical expenditure of funds, with the elimination of the promoter's profits, to the end that irrigation securities shall become gilt-edged, with consequent low interest charge. Cooperative State and Federal legislation will be necessary to bring this about.

Judicial proceedings against the Oregon & California Railroad Co.—In connection with the pendency of equity suit No. 3340, instituted in the United States District Court for the District of Oregon by the

United States against the Oregon & California Railroad Co. et al., to declare a forfeiture of the grants made to said company, attention is directed to compromises by stipulation between the Attorney General and certain purchasers from said company, as authorized by the act of August 20, 1912 (37 Stat., 320). The acreage involved in the suits thus compromised for which the purchase price has been paid to the Government is 340,887.87, for which the United States has received \$852,219.95.

Power-site reserves.—Under the provisions contained in the act of June 25, 1910 (36 Stat., 847), as amended by the act of August 24, 1912 (37 Stat., 497), and the act of June 25, 1910 (36 Stat., 855), 247,639 acres were withdrawn for water-power-site purposes during the year 1914. During the same period there were restored 90,305 acres previously withdrawn. At the present time the outstanding power-site withdrawals total 1,991,617 acres.

Disposition of the public domain.—Contrary to the general belief, the business of the Land Department is increasing, although the moneys received from public-land sources are decreasing. A comparative study of the statistics of the General Land Office submitted by the Commissioner, covering the last five years, makes the reason for this situation apparent, as the logical result of the present methods by which title to our public domain may be acquired. The permanent development of our national resources, substituted for the sale of our public lands has naturally resulted in the diminution of the cash receipts, while at the same time enlarging the activities of the public land service.

As a result of this study of the situation the Commissioner is led to note the marked decrease in the annual addition to the reclamation fund during recent years, and to raise the question as to whether or not it will be more conducive to the general development of the country if the Government should charge a low price, say \$1.25 per acre, in addition to the usual fees and commissions, for all lands disposed of under the homestead laws, the proceeds to be used for the reclamation of greater areas of arid lands. In this connection he calls attention to the fact that if such had been the practice from 1910 to 1914, inclusive, assuming that the same number of homesteads had been entered, it would have produced about \$40,000,000. The experience of the Government in the sale of Indian lands tends to the belief that such a practice would not greatly deter settlement.

Legislation.—The recommendations contained in the last annual report, to wit, demarcation of boundaries between certain States; consolidation of the Carey Acts; similar legislation with respect to the several right-of-way acts; provision for the forfeiture of the rights of way acquired under the acts of March 3, 1875 (18 Stat., 482), and March 3, 1891 (26 Stat., 1095), on account of nonuser; amendment

of laws relating to Alaska; provision for a final-proof-taking officer; equalization of fees in public-land proceedings; and provision for an additional Assistant Commissioner, are again renewed and urged upon the especial attention of Congress.

OFFICE OF INDIAN AFFAIRS.

The progress made in administering the affairs of the Indian Bureau during the past fiscal year has been most gratifying. As a first essential it has been the aim to promote a reciprocal attitude on the part of the Indians, to bring them in friendly touch with the administration of the bureau, and to establish a cordial cooperation between them and those laboring in their behalf.

A comprehensive study is being made of the physical conditions surrounding the Indian problem in general, and each reservation or locality, considered in the light of a unit, is being analyzed with especial reference to its particular needs and possibilities.

Many responses are being received from representative members of the several tribes to whom letters have been addressed inviting suggestions for their tribal and individual betterment. From these much is learned of the Indians' material and moral welfare which, added to the information gleaned through other avenues of investigation, furnishes a basis for an intelligent study of the industrial, educational, and moral improvement of this race of people.

The machinery of the bureau, with some modifications and improvements, is ample to provide for all educational requirements, and automatically promotes moral standards. It is through the enlargement of industrial activities, however, that the greater number of Indians residing on the reservations must be awakened from the apathy into which they have been driven through several decades of misdirection. Hundreds of these people are to-day in the advance guard of the country's history makers; but on the reservations are too many leading an idle, aimless life. To reach this great mass of human beings and instill within them ambitions for enlightened comfort and contentment is the serious task at hand, to meet which there must be opened to them the gates leading to the several avenues of industrial pursuits. Heretofore and more particularly previous to the beginning of the last fiscal year and excepting some instances where tribal funds were available for the purpose, this has been impossible through the lack of funds. The Congress in the last Indian appropriation act provided reimbursable funds of \$725,000 with which to continue this crusade and the Indian Bureau is now most actively engaged in advancing reservation Indians along industrial lines.

During the past year there were expended about \$1,000,000 in the purchase of live stock and in the upbreeding of the Indians' cattle,

horses, and sheep. This sum, however, came principally from the Indians' own funds and was used for tribal purposes. In some instances a small part of these tribal funds was advanced to individual Indians to assist them in procuring farming equipment. The use of reimbursable funds is not, however, an experiment, as it has been proven through the use of smaller sums than that appropriated by the last Congress that such a fund can be used beneficially and with practically positive assurances of reimbursement. The first fund of this nature was appropriated by the act of April 30, 1908, for use at the Fort Belknap Reservation in the sum of \$25,000. The total purchases made from this fund aggregated nearly \$30,000, and there is still due from Indians a little over \$9,000, made possible by reloaning the reimbursements. In 1910 \$15,000 was appropriated for similar use at the Tongue River Reservation; in 1911 \$30,000 was appropriated and apportioned by the Indian Office among 14 different superintendencies, and in the act of June 30, 1913, \$100,000 was made available for this use, with which last-mentioned amount the Indian Office has been enabled to lay out a comprehensive plan for assisting the individual Indians to embark in some profitable industrial pursuit. Never before in the history of the Indian Office has the future of the Indians looked so promising.

Educational facilities and opportunities.—In addition to the large nonreservation schools, such as those at Carlisle, Pa.; Lawrence, Kans.; Chilocco, Okla.; Riverside, Cal.; Phoenix, Ariz.; and Salem, Oreg., there are on the Indian reservations 217 day schools which are conducted similarly to the public schools in the several States. Through the encouragement of the Indian Bureau the Indian children have to a very large extent been induced to enter the public schools where available, and during the past fiscal year the increased enrollment in the public schools in some instances amounted to more than 100 per cent. Various forms of cooperation with the public schools have been employed, including payment of tuition for Indian children where the Indian pupils were in the minority, and in other cases where the greater number of pupils were Indian the payment by the State authorities for tuition for the white children. The total enrollment of Indians in the nonreservation, reservation boarding, day schools, mission, and public schools is 57,898.

Health conditions.—With the increased appropriations for the fiscal year 1914, much has been done in the way of improving the sanitary conditions of the Indians and providing sanatorium treatment for the diseased and afflicted. At the close of the fiscal year there were 50 hospitals, with a combined capacity of 1,400 patients, and 6 others under construction, and with the \$300,000 appropriated for health work for the ensuing fiscal year, \$100,000 is made available for hospital purposes. Plans are being completed for the construc-

tion of seven new hospitals, at a cost ranging from \$12,000 to \$15,000 each. These facilities are hardly adequate for a population of over 300,000 persons with a high percentage of tuberculosis and trachoma, which two diseases are being combated with every facility at hand.

Mining operations.—The oil situation in Oklahoma became a very perplexing problem during the past year, due somewhat to the extensive production and a waning market. Wells of large volume in the Cushing district brought in a little over a year ago were augmented by the discovery of another large pool near Healdton. The latter development, however, is of an inferior grade but of great value for fuel. The price of oil has gradually receded from \$1.05 per barrel in February, 1914, to 55 cents in October of this year. Efforts are being made to bring about a diminution of oil development and production until such time as the demands for oil shall become greater. The Indian Office is cooperating with the Bureau of Mines in an endeavor to prevent the waste of oil and gas in Oklahoma, it having been shown that thousands of barrels of oil were lost during the past year in the Healdton field alone. The loss in natural gas has been, generally speaking, through a wanton disregard by the producers of the value of this commodity. The operators generally were seeking oil for which there was a market, and the natural gas, being unmarketable, was merely a side issue.

Native industries.—The Navajo blanket industry, which furnishes to this tribe an annual income of \$600,000, is receiving attention not only as to the extension of the industry but the procuring of an adequate market for the product. Basketry and lace-making are industries promising remunerative employment to the Indian women, and plans are under way in the Indian Office to induce the Indians to make a better grade of articles and to create a better market and consequently better prices.

Irrigation of Indian lands.—On 56 different reservations there are 62 principal irrigation projects or systems covering an area of 900,000 acres; homes of 20 acres each for 45,000 Indians, with an estimated value of \$72,000,000 on which there has been expended \$8,500,000, and which will require a further expenditure of \$13,000,000 to complete. These are exclusive of the projects in Montana under construction by the Reclamation Service. The irrigable lands belonging to the Indians form one of the principal sources of wealth of these people, and also form probably the best opportunity for these people to become individually self-supporting. In some sections of the country the Indians are better acquainted with irrigation farming than the whites in the same communities, and they are making great success in this line. In other sections they will have to be taught the advantages of this method of farming and a considerable part of the reimbursable appropriation will be used

to place individual Indians in the way of making use of this resource. One of the most important irrigation developments with which the Indian Office is confronted is in what is generally known as the Papago country in southern Arizona. The available water supply in this section lies in an underground stratum and the development necessarily will be somewhat more costly than where the gravity system can be used, but the climatic conditions fully warrant the expenditure, and the necessities of the Indians demand it. There are about 10,000 Indians who will be benefited by this underground water development in southern Arizona, and these are a people who have occupied the country for hundreds of years.

Five Civilized Tribes.—The year marked the practical extinguishment of the tribal form of government for the Cherokees. The tribal form of government was abolished at the close of the last fiscal year, all tribal officers having tendered their resignations, effective as of that date. All these resignations were accepted except that of the chief, whose temporary continuance in office will be necessary to complete the disposal of the few remaining details incident to the dissolution of the tribal government. The force of tribal attorneys employed under authority of the act of Congress of June 30, 1913, has accomplished much in the way of prosecuting those who had defrauded minor Indians, and in recovering estates, causing the removal of dishonest and incompetent guardians, procuring substitution of substantial bonds for worthless ones, and saving many thousands of dollars to Indian minors, and directing the investment for their benefit. These direct results will have a beneficial moral influence on the whole community and will go far toward preventing a repetition of dishonest methods in the future.

Purchasing supplies.—The Indian Bureau purchased last year approximately \$3,500,000 in goods and supplies. Efforts are on foot to effect economy in the purchasing of Indian supplies through (1) the securing of contractors of reputable commercial standing, (2) the selection of the best articles obtainable for the money and of a standard to meet the needs of the service, (3) a most thorough inspection of deliveries, and (4) a development of short cuts with quick results, both as to the placing of the order and delivery to the destination. The Bureau of Standards, the Bureau of Mines, and the Bureau of Animal Industry are lending material assistance in the inspection and selection of purchases with which the respective bureaus are intimately acquainted. In order that the purchasing of Indian supplies might have the undivided attention of a force organized solely for the purpose, there has been created in the Office of Indian Affairs a purchase division to which has been assigned the complete study and devising of plans for the effecting of economies in this line.

Individual Indian moneys.—These funds are derived principally from the sale of allotted and inherited lands, lease accruals, the sale of timber, oil and gas royalties, and earnings of outing pupils. At the close of the fiscal year these individual funds on deposit in bonded banks amounted to \$13,000,000. These deposits draw interest averaging about $3\frac{1}{2}$ per cent. In addition to the individual funds, there are approximately \$5,000,000 of tribal funds on deposit in bonded banks. During the year two of these banks were closed by order of the Comptroller of the Currency, and since the beginning of the policy of depositing Indian moneys in banks there have been in all five failures but no loss has accrued to the Indian depositors, either of principal or interest, as the sureties have in every instance been adequate and have paid all Indian deposits.

A home for each Indian.—The initial step in separating the Indian from reservation or tribal life is the allotment to each of a tract of land. Since the passage of the general allotment act in 1887, the making of allotments to Indians has progressed continuously and at the end of the last fiscal year there were a total of 212,190 allotments made. During the last year, 4,066 allotments were approved and 8,521 selections for allotment were made. Under the several laws relating to allotments, the areas differed from 10 acres of intensive-farming irrigable land on the Colorado River and Yuma Reservations to 320 acres of agricultural or 640 acres of grazing land in the more rigorous northern climate occupied by the Sioux. Except in the southwestern country, particularly in Arizona and New Mexico, the dividing up of the reservations has been nearly completed. Following the allotments in severalty comes the next step in individualizing the Indian and the making of him a home builder. This is now the real work of the Indian Bureau. To this end, there are employed in the Indian Bureau 450 farmers, each assigned to a district, whose duty it is to instruct the Indian allottee in agriculture, and reports show that at the end of the last fiscal year there were 29,482 Indians engaged in farming an acreage of 604,518.

The field matron.—There is no more potent factor in the development of Indian home life than the field matron. It is not enough that she should be familiar with the duties of housekeeping, but she must be endowed with a sympathetic nature and missionary spirit; she must teach the Indian mothers how to feed and care for their infants, in health and in sickness; she must teach them to love their homes and to be appreciative of comfortable and even beautiful surroundings; she must create in them the desire and need of that excellence in home building which brings happiness and contentment. For this purpose, the Indian Bureau has apportioned \$60,000 from the appropriation of \$450,000 for industrial work, and is expending

its energy in procuring for this service personalities meeting the requirements.

Leasing of Indian agricultural lands.—While in some cases it is imperative that an Indian be permitted to lease his allotment, the practice is being, however, discouraged by the Indian Bureau, and every effort is being put forth to induce the Indian to engage more extensively in the cultivation of his own land and thereby reap the reward of industry which too often has been the harvest of the more progressive white lessee. The Indian Bureau has to combat not only the tendency in the Indian to yield to the seductiveness of idleness, but also public opinion against the nonuse of comparatively large areas of agricultural land. By the judicious use of the reimbursable funds appropriated for the purpose, much headway has been made toward building up an ambition in the Indian to possess the wealth and competency which by right is his through ordinary industry and endeavor, and the leasing of these lands is being restricted more and more to the minors and those physically disabled or otherwise incapacitated.

Forests and lumbering.—With approximately \$90,000,000 worth of timber, the Indian enters the lumber mart as no small factor. The Indian Bureau is now operating 40 sawmills on various reservations through the Northwest and far West, and during the fiscal year just closed there were purchased seven new up-to-date sawmills and in addition two mills were rebuilt. This vast timber asset is not only a source of wealth to the Indians, where its development is strictly along commercial lines, but its conversion into lumber for building fences and other purposes is essential in the training and employment of the Indians themselves, both in the mills and in the logging camps, and are elements of economic administration well balanced with the needs of the Indian in his home life. With the diminishing supply, the prices are proportionately increasing, and it is pleasing to note that while the timber resources in private ownership have been so greatly encroached upon, those of the Indians have remained intact, and through the construction of roads are becoming each year more accessible and valuable.

Combating the use of intoxicants.—The strongest kind of a campaign is being waged against the traffic in liquor in the Indian country. The evil resulting from the use of intoxicants is emphasized when the Indian becomes the victim. These truly first Americans were not bequeathed ages of training in self-control, and it is no wonder that when there is thrust upon them this most insidious of vices they become ensnared in its monstrous grip. Not alone for the salvation of the Indian is it incumbent upon those acting in the capacity of guardian to suppress this traffic, but it is a duty owed to the sur-

rounding white communities. The Indian, possessed as he is of lands and money, becomes through the agency of this vice a common prey to the unscrupulous white man or designing tribesman, and encourages dishonesty and sharp practice among the white neighbors, so that the white community surrounding these Indian reservations becomes more and more debauched and the standard of square dealing grows so diminutive that the very youth in the community is no longer able to distinguish between right and wrong. An efficient special corps of employees devoted solely to this branch of the work is cooperating with the superintendents in awakening the conscience of the communities surrounding Indian reservations as well as the employees of the service, from the lowest to the highest, to the debauching effects of the use of intoxicants among Indians.

Sale of and patents in fee for Indian lands.—Nearly 100,000 acres of Indian lands were sold during the past year for a consideration of \$1,652,815, which sum has generally been placed to the credit of the individual Indians subject to their checks when approved by the Indian Office. This money is in large part used by the Indians in improving their retained lands, but in the case of old and feeble Indians it is paid to them as their needs require. During the year there were approved 1,148 applications for patents in fee, covering 152,000 acres of land, and since the act of May 8, 1906, authorizing the issuance of patents in fee, there have been approved 7,315 applications, involving an area of nearly 800,000 acres. It is estimated that about 75 per cent of these applications have been approved to Indians of one-half or less Indian blood.

Indians for exhibition purposes.—It is deemed inimical to the interests of the Indians to encourage their participation in circuses and shows where the customs and habits of their forefathers are exhibited as representative of Indian life. Every effort is being made to dissuade the Indians from abandoning even temporarily their homemaking for this short but lucrative occupation. Where it is not possible to prevent this practice, the Indian Office protects them as far as possible by securing from their employers satisfactory bonds guaranteeing the payment of salaries and their return to the reservations. The curtailment of the photographing of Indian ceremonies is also being enforced, particularly where they picture manufactured and nonprogressive customs and ceremonies.

Economies in the service.—With its 6,000 employees, the Indian Service becomes a fruitful field for economy in administration, and the bureau has been deeply appreciative of this fact and has inaugurated reforms both as to the betterment of the service and decreased demands upon the Public Treasury. After a thorough investigation in some sections of the field service it was found that a reduction in

force could be accomplished without a decreased efficiency, and many positions not absolutely necessary have been discontinued. The practice of paying per diem to employees when not actively on duty, such as for Sundays and holidays, has been discontinued, and the per diem is now allowed only to employees for service in the field when actually away from headquarters and where such per diem is legal and constructively payable.

THE FIVE CIVILIZED TRIBES.

The report of the Commissioner to the Five Civilized Tribes shows the progress made in the matter of closing the affairs of the Five Civilized Tribes in Oklahoma. The citizenship rolls were closed by law on March 4, 1907, and the work of allotment has been practically completed, as shown by previous reports. There are still some allotment deeds to be delivered and other minor details in connection with closing the allotment records to be attended to. The equalization of allotments in the Cherokee, Choctaw, and Chickasaw Nations has been completed with the exception of about \$92,000 due 6,987 allottees. In most of these cases the amount to be paid is so small that the allottees fail or refuse to make application or take any steps to secure the same and it will probably be necessary to withhold such payment for the present and pay the allottees entitled thereto at the same time the per capita payments are made. Also no steps were taken during the year to equalize allotments in the Creek Nation, but the Indian appropriation act of August 1, 1914, provided for the equalization of Creek allotments on the basis of \$800 instead of \$1,040 as provided by the Creek agreement, there not being sufficient funds to the credit of the Creek Nation to equalize allotments on a basis of \$1,040.

Status of work in Seminole Nation.—The allotment work in the Seminole Nation has been completed with the exception of issuance of about 800 deeds to restricted allottees and the delivery of 751 deeds to unrestricted allottees in cases where the land has been sold for grossly inadequate considerations. All Seminole property has been disposed of with the exception of two tribal boarding schools, including 320 acres for each school. There are about \$1,800,000 tribal funds to be distributed per capita to the citizens in this nation.

Status of work in Creek Nation. The allotment work in this nation has been completed with the exception of the delivery of 643 deeds. There are 2,495 acres of unallotted land to be disposed of; and there remains the equalization of allotments requiring payment to about 17,700 allottees, authorized by the act of Congress approved August 1, 1914. There are four tribal boarding schools in this nation with 40 acres of land each and also the Creek capitol building and grounds at Okmulgee and 168 town lots to be disposed of.

Status of work in Cherokee Nation.—The allotment work in this nation has been completed and all of the unallotted land disposed of, with the exception of 80 acres involved in suit and 226 acres, including what is known as "Big Lake," the status of which has not yet been determined; the payment of 1,996 shares to equalize allotments, and the final distribution of tribal funds per capita, amounting to about \$836,000. There are also about 270 rural cemeteries for which patents are being prepared and 997 allotment deeds to be delivered.

Status of work in Choctaw and Chickasaw Nations.—The allotment work in these nations has been completed, with the exception of adjustment of a few minor details, investigation as to several duplicate enrollments, and the delivery of about 1,000 allotment deeds. There are still 1,425,321 acres of tribal land to be disposed of in these nations, including 968,640 acres of timberland, 25,600 acres of unallotted land, and 431,080 acres of segregated coal and asphalt land. Also, the mineral underlying the coal and asphalt lands has not been disposed of, but it is contemplated selling the surface of such lands in the near future and disposing of the mineral at a later date when authorized by Congress. There are also a number of cemeteries to be conveyed in these nations, 2,276 town lots to be disposed of, and the deferred payments on thousands of tracts of unallotted land sold, together with the preparation and delivery of patents to such lands. There are also six tribal boarding schools being maintained in these nations which belong to the tribes.

The principal work of the Commissioner to the Five Civilized Tribes during the year was in connection with the sale of unallotted lands. Three sales of such lands were held during the year, at which 317,955 acres were sold for a total of \$1,499,151.38. One sale of timberlands in the Choctaw Nation was held under regulations approved by the Department August 9, 1913, at which 1,274,024 acres were offered and 306,286 acres sold for \$1,460,244, or an average of \$4.77 per acre, the average minimum price being \$4.23 per acre.

Another sale of unallotted lands in the Creek and Cherokee Nations, including some land that had been sold but declared forfeited on account of failure of the purchasers to make payment, was held under regulations approved September 20, 1913. At this sale 2,769 acres in the Creek Nation were sold for \$17,893 and 8,656 acres in the Cherokee Nation were sold for \$20,205.03. The third sale consisted of 244 acres in the Cherokee Nation, all of which was disposed of, the total purchase price being \$808.50. The sales held during this year, together with previous sales of unallotted lands aggregated 2,157,039 acres in 29,825 tracts, the total purchase price being \$12,189,192, or \$2,623,867 more than the minimum price asked. A

total of \$7,133,841.38 has been collected from the sale of land, and the balance of the purchase price, representing deferred payments, draws 6 per cent interest until paid. About 532,000 acres of unallotted land sold have been paid for in full and patents issued.

The work of surveying, classifying, and appraising the surface of the segregated coal and asphalt lands, consisting of 431,080 acres, was completed during the year, such surface being surveyed into 3,598 tracts of agricultural and grazing land, aggregating 395,087 acres, the remainder of the surface of said lands, 35,983 acres, being classified as suitable for townsite property and subdivided into 3,552 lots, from 1 to 40 acres each. Time for the completion of the appraisement of these lands and improvements was extended to December 1, 1913, by the Indian appropriation act of June 30, 1913. and by joint resolution approved December 8, 1913, the time was again extended for 60 days from that date; any unfinished work after that time to be completed by the Secretary of the Interior. The work was finally completed by the appraisers on February 7, 1914, and the schedules prepared by them were thereafter forwarded by the Commissioner to the Five Civilized Tribes for approval. No steps were taken to dispose of the surface of these lands during the fiscal year.

Tribal revenues.—On June 30, 1914, there was on deposit in 197 national banks and 52 State banks in Oklahoma an aggregate of \$5,083,988.82 of funds derived from the sale of property belonging to the Five Civilized Tribes, such deposits being authorized by the act of March 3, 1911. The interest on these deposits amounts to over \$220,000 per year. The banks holding such deposits are located in 69 counties in the State.

The tribal revenues collected during the year were as follows: Grazing fees, \$78,385.99; royalty on coal and asphalt tribal leases, \$250,504.65; payments on town lots \$16,173.49; sale of unallotted lands, \$1,537,104.20; other sources, \$104,110.69, making a total of \$1,956,279.02. Since the passage of the act of June 28, 1898, a total of \$17,699,826.56 has been collected and deposited to the credit of the Five Civilized Tribes by the office of the Commissioner to the Five Civilized Tribes and the United States Indian superintendent of Union Agency.

Coal and asphalt leases.—There are 109 tribal coal leases, covering 99,800 acres, and 7 asphalt leases, covering 4,960 acres, entered into under the act of June 28, 1898, which leases run for 30 years from their date and cover portions of the segregated coal and asphalt lands in the Choctaw and Chickasaw Nations. During the year 2,892,294 tons of coal were mined from these leases, the royalty being 8 cents per ton, mine run, and 1,476 tons of asphalt were mined, the royalty being 10 cents per ton for crude asphalt and 60 cents per

ton for refined asphalt. The total royalty paid was \$250,504.65. Under the act of March 4, 1913, which provided for leasing additional acreage of the unleased segregated coal lands where such acreage was necessary for mines in operation, four leases or additions to leases were approved during the year. A total of 30 applications for leases under said act had been made up to June 30, 1914.

Tribal governments and attorneys.—The expenses of the tribal governments of the Five Civilized Tribes during the year, including salaries and expenses of tribal attorneys, amounted to \$87,003.37. The tribal governments consist of a principal chief or governor, with such clerical force as is necessary; practically the only duties being performed are the execution of patents and the making of reports and recommendations concerning matters affecting the tribal interests when called upon. Tribal attorneys have been employed in each of the nations, excepting the Seminole, to represent the tribes in litigation affecting their interests, and also during the year 3 additional attorneys were employed in the Cherokee Nation, 3 in the Creek Nation, 2 in the Choctaw Nation, and 2 in the Chickasaw Nation for the special purpose of looking after probate matters and the protection of the estates of minors and dependent citizens of the tribes, such 10 probate attorneys being paid from tribal funds, and in addition thereto 8 probate attorneys were employed, payable from congressional appropriation.

The tribal affairs of the Cherokee Nation being practically all disposed of with the exception of the payment of the funds to members of the tribe, the resignations of all tribal officers in such nation were accepted on June 30 with the exception of the principal chief, who will be continued a short time to execute patents to cemeteries or perform any other duties that may be required of him.

Tribal receipts.—During the year there was received by the disbursing agent of the Commissioner to the Five Civilized Tribes, in connection with tribal affairs, \$2,150,157.04, which was disbursed or properly accounted for, making a total of \$4,300,314.08 handled during the year.

Work of Union Agency.—About one-third of the 101,000 members of the Five Civilized Tribes are within the restricted class. The matters pertaining to such allottees, including leasing for grazing and agriculture and for oil and gas, sale of their lands, supervision of the proceeds, and the protection of their interests, conservation of their property, etc., are handled by the superintendent at Union Agency, under direction of the Commissioner of Indian Affairs. There is also much work of a general character, such as placing Indian pupils in schools, encouraging industrial advancement, better methods of farming, instructions along hygienic lines, etc.

Probate matters.—Owing to the congestion of business of this kind in the county courts and the lack of proper provisions for properly handling the same, and it being impossible for the attention which the importance of the matter demanded to be given to individual cases, in many counties probate matters affecting the estates of minors and dependent citizens of the tribes were in a deplorable condition. Every effort possible has been made to relieve the situation. For a number of years there have been 18 field clerks stationed at convenient places throughout the Five Civilized Tribes, each field agent having an average of about 2,000 restricted Indians under his immediate supervision, and also during the past year 18 probate attorneys were employed to look after probate cases thus relieving the field clerks of that work and leaving them free to devote their attention to other matters, such as leasing, removal of restrictions, sale of land, etc. Practically the greater number of probate cases involve the estates of unrestricted Indians, where the employees of the department can take no action except in an advisory capacity to the courts.

As a result of a visit to Oklahoma and conference with State and Federal officials by the Commissioner of Indian Affairs, a uniform system of procedure in the courts affecting probate matters of Indian minors has been adopted, and the tribal and probate attorneys have cooperated and worked harmoniously with the probate courts in practically all counties, and probate matters generally are in much better condition than heretofore.

Removal of restrictions.—During the year 1,462 applications for removal of restrictions upon the alienation of allotted land were made, as compared with 1,238 during the previous fiscal year, which makes the total number of applications since the passage of the act of May 27, 1908, 11,056, of which 4,770 have been approved conditionally and the land advertised under the supervision of the superintendent, Union Agency, and where sales were effected the proceeds were held by the superintendent and disbursed for the benefit of the allottee from time to time. In 2,232 cases the restrictions have been removed unconditionally and the allottee permitted to sell his land without supervision of the department. During the year 934 tracts of allotted land were sold where restrictions had been removed, aggregating 66,104 acres, for \$636,042.80.

Leasing of allotted land.—During the year there were filed 3,338 leases covering restricted allotments, practically all of which were for oil and gas. This makes the total number of leases filed 31,866 since 1898, of which 8,811 were approved and are still in effect, 9,048 have been surrendered or canceled after approval, and 4,674 removed from departmental supervision after approval on account of the restrictions of the allottees having been removed by operation of law.

The price of oil gradually increased during the year until it reached \$1.05 per barrel in what is known as the Mid-Continent field in Oklahoma, which resulted in a great increase in the oil industry, and the discovery of what is known as the Cushing field in Creek, Payne, and Lincoln Counties and the Healdton field in the southern part of the Chickasaw Nation. The price of oil, however, declined until at the end of the fiscal year it was 75 cents per barrel in the Mid-Continent field and 50 cents per barrel in the Healdton field. On June 30, 1914, the number of open royalty accounts was 10,853, an increase of 1,130 during the year. The total oil and gas royalties received during the year for the benefit of Indian lessors was \$2,113,820.25, which, however, does not include royalties received by Indians direct who are not under supervision of the department. It is estimated that during the year the sales of oil amounted to 56,201,000 barrels from the territory of the Five Civilized Tribes, an increase of about 7,000,000 barrels, as compared with the previous year. It is estimated that the total daily production of oil on June 30, 1914, was about 322,000 barrels. Many small pipe lines have been constructed during the year, but the pipe-line facilities are still inadequate to care for the production.

The actual collections by the Union Agency during the year, in connection with affairs of restricted Indians, totaled \$3,135,638.19, not including moneys received from the Treasury Department on requisition nor balances carried over from the previous year. The disbursements were \$3,926,117.43.

Education.—Of the \$300,000 appropriated by the Indian appropriation act of June 30, 1913, to assist school districts in the State of Oklahoma on account of the fact that there was so much allotted land not subject to taxation a total of \$291,920.37 was distributed in 2,129 districts, in which districts there were enrolled 8,067 restricted Indian pupils, 16,490 unrestricted Indians, and 2,443 freedmen, and \$7,785.43 was expended for administrative expenses, making a total expenditure of such appropriation of \$299,707.29. Four tribal boarding schools have been maintained in the Choctaw Nation, 2 in the Chickasaw Nation, 4 in the Creek, and 1 in the Seminole Nation from tribal funds. During the year the Cherokee Orphan Training School near Tahlequah was purchased by the United States as authorized by the Indian appropriation act of June 30, 1913, and is being conducted for the benefit of orphan Indian children of the Five Civilized Tribes. In the 11 boarding schools maintained from tribal funds there were enrolled 1,274 pupils at a cost of \$206,117.65, including the cost of maintenance, buildings, and repairs.

Every effort possible has been made to place the children, especially of the full bloods, in schools, and satisfactory work has been accom-

plished along such lines, although on account of natural timidity or disinclination of full-blood children to attend school with white pupils and the lack of accommodation at the boarding schools for all such pupils the result is still far from what it should be.

Needed legislation.—In the last annual report attention was invited to legislation required before the tribal affairs of these tribes can be finally completed and funds distributed. Legislation that is still necessary is—

First. Provision for the final disposition of the coal and asphalt minerals in the Choctaw and Chickasaw Nations underlying about 440,000 acres, the surface of which is now being advertised for sale under the provisions of the act of Congress approved February 19, 1912.

Second. Provisions to make per capita payments to Indians from time to time from tribal moneys on hand, as may be deemed advisable.

Third. The disposition of 12 tribal boarding schools, together with the land reserved for each, now being maintained from tribal funds, or some arrangements made for the setting aside of specific amounts for their permanent maintenance, in order that other tribal funds may be distributed.

Regarding the affairs of about 33,000 restricted Indians of these tribes, whose land wholly or in part can not be sold by them except with the approval of the department, no further legislation seems advisable relative to removal of their restrictions, as the Secretary of the Interior is now authorized to release such of them under the supervision of the department as he deems advisable.

Attention was invited in the last report, however, to the fact that many of such class of Indians, principally full bloods, are not living upon or improving lands selected by them and designated as their homesteads. The recommendation is therefore renewed that legislation be enacted to permit Indians, with approval of the department, to change and have designated from their allotted lands not exceeding 40 acres for a homestead which should not be subject to lease, thereby insuring for such Indians a home, as under existing law all restricted Indians may lease lands allotted to them other than the homestead for a period of five years and the lands within their homesteads for one year without the approval of the department. As a result many Indians, especially the more ignorant full bloods, lease their entire allotments for grossly inadequate rentals, and where leases are set aside for fraud or other reasons new ones are frequently made for no better consideration.

The Commissioner to the Five Civilized Tribes suggests that, while liberal appropriations are much desired for education until lands can

be taxed for such purpose and provision be made to eradicate disease and improve the Indians, he does not believe much permanent beneficial results in such matters will be accomplished until legislation is enacted providing that all leases made by Indians under control of the department shall be approved by some local authority designated by the Commissioner of Indian Affairs, thereby insuring for the Indian means to enable him to improve his home and general condition.

The State courts of Oklahoma have jurisdiction over estates of all Indian minors, restricted or otherwise, but by reason of the area of country and the number of Indian minors in each county, together with the large population of white people, it has been found practically impossible to protect the estates of such minors, and in some instances large amounts have been recovered as results of investigations.

The Commissioner of Indian Affairs in January last visited Oklahoma and held earnest and extensive conferences with all of the probate judges, county, tribal, and Federal attorneys throughout the Five Tribes, and as a result there has been adopted a much-desired uniform rule of procedure in handling such minors' estates, and all have cooperated for the better protection of minors' property. By an increased Federal appropriation, available for investigation, and the vigorous personal attention given by the Commissioner of Indian Affairs to such matters, there is a marked improvement in probate proceedings, and it is apparent that a very material saving and recovery of minors' estates will result. As restricted minors will be relieved of such assistance and protection when reaching their majority, the importance of having their agricultural leases thereafter approved by some local authority seems highly desirable.

PENSION OFFICE.

Number of pensioners.—There were on the pension roll at the end of the fiscal year 785,239 names, a net loss of 35,033 from the total of 820,272 on the roll at the beginning of the year. The net loss for the preceding year was 40,094.

The number of deaths of pensioned Civil War soldiers was 33,639, as against 36,064 in the preceding year, and the total number of pensioned survivors of that war is 429,354, as against 462,379 at the beginning of the year. The percentage of deaths of Civil War soldiers from 1909 to 1914 increased gradually from 5.2 per cent to 7.3 per cent, but the actual number of deaths does not always show an increase, year by year.

Unexpended balances of appropriation.—The unexpended balances of appropriations at the close of the year were as follows:

For Army and Navy pensions.....	\$7, 658, 572. 87
For fees and expenses, examining surgeons (estimated).....	171, 142. 44
For salaries.....	65, 093. 12
For per diem and expenses, special examiners.....	105, 694. 03
Total.....	8, 000, 502. 46

Disbursements for pensions.—The amount disbursed in the payment of pensions during the year was \$172,417,546.26, as against \$174,171,-660.80 for the preceding year, which was the largest amount ever expended for this purpose. The decrease in total expenditures may naturally be expected to continue.

The amount appropriated for the payment of pensions for the fiscal year 1914 was \$180,000,000, and the appropriation for the current fiscal year was \$169,000,000. It is estimated that \$166,000,000 will be needed to be appropriated for the fiscal year 1916.

The total amount disbursed for pensions from July 1, 1790, to July 1, 1914, is shown to be \$4,729,957,370.94, of which amount \$4,457,-974,496 is charged to allowances made on the basis of service rendered in the Civil War. The number of pensioners residing in foreign countries in the year 1914 was 5,163, and the amount paid to them was \$1,034,071.88.

Reduction of force.—The decrease in the work of the Pension Bureau due to the fact that most of the claims of soldiers of the Civil War have been allowed under the act of May 11, 1912, necessitated a reduction in the force of the Pension Bureau, and, by action of Congress, 145 positions were eliminated for the current fiscal year. By declining to fill vacancies as they accrued, by resignations, and by transfers to other bureaus, a sufficient number of vacancies existed when the law took effect to necessitate the dismissal of only 50 employees. Of the 247 old soldiers and the 23 widows of soldiers and sailors employed in the bureau not one was dismissed. In addition to the 50 employees who were dropped for want of appropriation, a large number were reduced in salary to meet the requirements of the new appropriation act. It is believed that another considerable reduction of force will be necessary at the end of the current year.

Revolutionary War archives.—The papers in pension and bounty land claims based on service in the War of the Revolution are constantly becoming more valuable. These have been arranged alphabetically by a method of flat filing which tends to their preservation and facility of reference. These documents are open to the public under the provisions of the act of Congress of March 3, 1901. There is a constant demand for information from these records, which consist of 72,284 admitted claims, 10,319 rejected claims, and 8,843 claims

for bounty land. Making allowance for claims for the same soldiers pensioned under different laws, it is found that the actual number of soldiers pensioned for the Revolutionary War was 52,504. The last pensioned soldier of the Revolutionary War was Daniel F. Bakeman, of New York, who died April 5, 1869. The last pensioned widow of the Revolutionary War was Esther S. Damon, widow of Noah Damon; she died November 11, 1906.

During the fiscal year 602 persons called at the bureau for the purpose of examining and collecting historical and genealogical data from these claims. In response to letters of inquiry, 2,454 certificates of service were furnished; 3,616 negative replies were sent; and 1,046 miscellaneous inquiries relating to the Revolutionary War were answered.

The two great patriotic societies, the Sons of the American Revolution and the Daughters of the American Revolution, make frequent use of these records, which furnish historical and genealogical data of great importance and reliability.

Claims on account of War of 1812.—The total number of certificates, both soldiers and widows, issued on account of the War of 1812 is about 67,000. Steps were taken, beginning in May, 1914, to index and "flat file" in envelopes these papers, following the methods used in arranging the Revolutionary War claims. This work is being carried on by the regular force without special appropriation, and already about 6,000 claims have been prepared. The value of these papers for historic and statistical reference is considerable and increasing, and their usefulness and accessibility will be greatly enhanced by the arrangement now being carried out. The last surviving pensioned soldier of the War of 1812 died in 1905.

Lists of pensioners furnished the public.—Pursuant to a provision of the act of May 11, 1912, a list of all pensioners under that act arranged by States, counties, and post-office addresses, is available for use from the beginning of the present fiscal year. Copies of this list for any given locality can be furnished to anyone on request, upon payment therefor in accordance with law. Under the arrangements made, such lists can be furnished at an expense of a little less than 1 cent per name. The demands for the information furnished by these lists, which is useful for many purposes, have been numerous and are increasing. The aggregate list includes only the soldiers of the Civil War and only those pensioned under the act of May 11, 1912, and is believed to include about three-fourths of the pensioned soldiers of that war, as it does not include those pensioned under the general law.

Certificates issued and applications filed.—There were 95,606 certificates issued during the year, as against 90,922 issued during the year ended June 30, 1912, and as against the very large number of 443,622 issued during the fiscal year 1913, this being the largest output

in the history of the bureau and being due to the speedy adjudication of the tremendous number of claims filed under the act of May 11, 1912. There were received during the year 92,072 applications of all kinds and 92,327 communications from Members of Congress. The total number of inclosures received through the mail division was 1,829,291, and the total number of pieces sent out was 3,749,490.

Ages of pensioners.—The ages of survivors of the Civil War and the Mexican War pensioned under the act of May 11, 1912, range from 62 years to 103 years, there being eight aged 95, two aged 99, one aged 102, and one aged 103. The greatest number at any one age is 53,569, aged 70.

APPEALS IN PENSION AND BOUNTY LAND CLAIMS.

The report of the work of the office of the Assistant Attorney General, referred to on pages 27 and 28, shows a notable increase in the number of appeals in pension cases docketed during the year ended October 1, 1914, an increase much in excess even of that predicted in last year's report. Where last year there were 808 pending appeals and motions there are now 3,175. During the year 6,580 appeals were filed and 4,211 were disposed of. The percentage of reversals is small, about 5 per cent. Of course, as pointed out in the last annual report, that percentage does not mark the limit of benefit to the pensioner due to the existence of the right to appeal, because the docketed appeals do not represent all the appeals filed, but merely those cases in which the Commissioner of Pensions decides not to recede from his adverse action.

In the last report it was said that if the then existing ratio of increase should be maintained, more than 4,000 cases would be presented for decision during the year. As a matter of fact, the exact figures, including motions, are 7,461. To meet the situation and to prevent delay in disposing of the appeals, it was necessary to increase by detail the number of gentlemen forming that section of the Assistant Attorney General's office charged with the consideration of these appeals. Four additional to those already assigned to the work have thus been detailed, aside from extra clerical assistance required by the situation.

The bulk of the increase came within the first six months of the year, 3,623 appeals as compared with 2,957 appeals docketed during the last six months. This points to a decrease, but even then the number filed in that period is more than double the number in the corresponding months of last year.

Unless the number of appeals decreases rapidly, it will be necessary again to augment the force, because the average age of the old soldier makes it imperative that a decision be rendered on his appeal with as little delay as possible.

PATENT OFFICE.

During the fiscal year ended June 30, 1914, there were filed 69,311 applications for mechanical patents, 2,441 applications for design patents, 189 applications for reissues, 8,146 applications for the registration of trade-marks, 1,016 applications for labels, and 436 applications for prints, the total number of such applications being 81,539, this constituting the greatest number of applications received during any year in the history of the Patent Office. In addition, 1,696 appeals and 20 disclaimers were filed. During the year there were granted 38,225 patents (including 1,773 designs and 176 reissues), 5,795 registrations for trade-marks, 720 registrations for labels, and 339 registrations for prints. The number of patents which expired during the year was 22,398. The number of allowed applications which were forfeited for nonpayment of the final fees therein was 8,010.

The total receipts of the office were \$2,169,988.95, and the total expenditures for all purposes were \$1,929,132.52, the net surplus of earnings over expenditures being \$240,856.43 for the year, with a grand net surplus of \$7,530,960.20 since the establishment of the present system in 1836.

BUREAU OF EDUCATION.

Higher education.—Within the year the Bureau of Education, through its specialists and assistants in higher education, studied the most important recent developments in the universities of England, Scotland, Ireland, and Wales; the preparation of teachers for secondary schools of Germany, France, and Great Britain; science teaching in the secondary schools of the United States; the teaching of English in American colleges and high schools; and the teaching of literature in the Gymnasien, Real Schulen, and Lycee of central and western European countries, and continued the investigation of standards in American universities, colleges, technical and professional schools, normal schools, and high schools. Its representatives visited and inspected 35 American colleges and universities; attended 15 conferences on higher education in different parts of the country; assisted in revising the methods of recording college activities and statistics; examined and certified the reports of the expenditures of Federal funds by the 67 land-grant colleges; made a detailed examination and report of the work of one of these and a minute and expert examination of the accounts and methods of accounting of three of them. The bureau worked out plans for the tabulation of college curricula; began a record of important changes in the administration of colleges, universities, and normal schools, and instituted a series of higher education letters.

School administration.—Through its division of school administration it made a digest of all important legislation and judicial decisions in regard to schools and education in all the States for the years 1912, 1913, and 1914; began a complete digest of all the school laws of the several States and completed this for 10 States; and prepared reports on compulsory school attendance, special features in city-school systems, and administration of State systems of education. It began a systematic study of schools in smaller cities and towns, visiting for this purpose the public schools of 22 cities in 10 States, and assisted in making an extensive survey of the schools of Ogden, Utah. It issued 22 circular letters on important school legislation and various phases of city-school work.

School hygiene and sanitation.—The division of school hygiene and sanitation collected and installed an important part of the scientific exhibit of the Fourth International Congress on School Hygiene at Buffalo; prepared bulletins on health teaching, buildings and grounds of rural schools, open-air schools, school baths, extensive bibliographies of publications on school hygiene, and a card catalogue of more than 5,000 foreign hygienists. It assisted school boards in all parts of the country in preparing plans for schoolhouses, laying out school grounds, and in improving the sanitary conditions of school buildings.

Rural schools.—Specialists and special collaborators in rural education made first-hand studies of rural schools in England, Scotland, and Ireland and in 10 States. In making these studies they visited more than 500 different schools. They visited and inspected rural high schools and agricultural schools in 15 States, and assisted in campaigns for school improvement in 4 States; they attended about 100 national, State, and local conferences on rural education and meetings of educational associations in which rural education was discussed; they prepared bulletins on the rural schools of Denmark, based upon studies of the previous year, and reports and bulletins on their studies of schools in the States. Special studies were made of education in the Southern Appalachian Mountains; of the consolidation of rural schools; of the preparation of teachers for rural-school work; and of the county unit in rural-school administration, and bulletins were prepared on all these subjects. About 30 circular letters on rural-school questions were prepared for distribution among rural-school officers.

Kindergartens.—Through its kindergarten division and in cooperation with the National Kindergarten Association and the International Kindergarten Union the bureau made a careful and comprehensive survey of kindergartens and kindergarten work in the United States and of the schools for training kindergarten teachers. It made a careful study of kindergarten buildings, rooms, and equip-

ment, and an inquiry into the results of kindergarten work as shown in the elementary schools. It made a brief comparative study of the kindergarten and the Montessori school and a special study of the kindergarten in orphanages and other institutional homes for children.

Negro schools.—Through its division of negro education the bureau made a careful study of secondary and higher schools for negroes in 8 Southern States, visiting for this purpose about 400 different schools, and began a tabulation of the results of this study. It investigated the systems of accounting in several of these schools, made suggestions for their improvement, and did other constructive work. It also made some investigation into the elementary public schools for negroes in rural and urban communities. In this work the bureau cooperated with several agencies and funds for the promotion of the education of the negroes in the South.

Home education.—The division of home education was established to advise parents in regard to the physical, mental, moral, social, industrial, and economic education of their children; to bring about a closer and more intelligent cooperation between home and school; to promote self-culture among older boys and girls and young men and women, and to enable the homes of the country to contribute more toward the education of the children, who are in school less than 4 per cent of the time from birth to 21. It works through school officers, teachers, and other men and women especially interested in education. The assistance of nearly 25,000 intelligent women in nearly 1,000 counties has been obtained for this work in rural communities. Twelve thousand mothers have been given some instruction in the care of young children. The division has directed the organization of many associations of parents and teachers and has prepared for distribution five reading courses for parents, boys and girls, and young men and women.

Civic education.—The division of civic education, established in February, collected and organized information in regard to civic education in elementary schools, cooperated with several associations in promoting civic education, began a study of the preparation of teachers for work in this and allied subjects, began an inquiry into instruction in government in colleges and universities. Its representatives visited and advised good government clubs in seven colleges, and conferred with school officers and civic committees in five large cities.

Education of immigrants.—The division of education of immigrants was established late in the spring. It has cooperated with the department of labor of Pennsylvania of investigating illiteracy among adult immigrants and methods of preparing immigrants for

American citizenship and life. It has also made some investigations in New York and Massachusetts.

Editorial.—The editorial division prepared for publication two volumes of the annual report of the Commissioner, 53 bulletins and more than 200 circular letters, of which approximately 600,000 copies were distributed.

Statistical.—The statistical division collected and compiled statistics of State school systems from all the States and Territories and from 20,863 city school systems, secondary schools, colleges and universities, normal schools, and professional, technical and special schools. It also collected, compiled, and summarized statistics of 13,595 libraries.

Correspondence.—The correspondence of the year through the offices at Washington and Seattle and the field stations amounted to approximately 97,000 letters each way; 500,727 copies of the publications of the bureau and approximately 100,000 copies of other documents were distributed.

Library.—The library received during the year 4,893 volumes, 8,482 serial publications, and 8,745 numbers of periodicals. It compiled 223 bibliographies, prepared a monthly record of current educational publications, and circulated 2,246 volumes among teachers and school officers.

The Alaska school service.—For this year the field force of the Alaska school service consisted of 5 superintendents, 1 assistant superintendent, 97 teachers, 9 physicians, 9 nurses, and 3 hospital attendants. Seventy schools were maintained with an enrollment of approximately 3,800 pupils. Three hospitals were maintained and natives were cared for under contract by 4 others. Relief was given sufferers from storm at Nome, from flood at Circle City, from an epidemic of measles on Kodiak Island, Afognak Island, and at Cook Inlet, and from an outbreak of infantile paralysis at Tanana. The health survey, begun three years ago with the cooperation of the Public Health Service, was continued. Reservations for natives were made by Executive order at Fort Yukon, Klukwan, Port Gravina, Fish Bay, and Long Bay. Important progress was made in industrial education at Hydaburg and the cooperative stores conducted by the natives under the direction of government teachers at Hydaburg, Klukwan, and other villages were very successful. A commodious schoolhouse was finished at Hydaburg and a government school opened at Metlakahtla.

The Alaska reindeer service.—On June 30, 1913, there were in Alaska 47,266 reindeer, distributed among 62 herds. The increase for the year was 23 per cent, notwithstanding the fact that nearly 5,000 reindeer were killed for their meat and skin. The total income of

the natives from the reindeer industry during the year, exclusive of meat and hides used by the natives themselves, was \$66,966.

Commissioner.—In addition to the regular work in the office, the Commissioner visited the Indian villages in southeastern Alaska, attended educational meetings, and visited and inspected schools in 28 States, called national conferences of State superintendents of public instruction, professors of education in State colleges and universities, and rural school inspectors, and made arrangements with the council of the city of Munich, Germany, by which a group of 27 American teachers of industrial subjects were permitted to visit and study in the industrial and continuation schools of that city from Easter to July 15.

Recommendations.—The following recommendations are submitted by the Commissioner: An increase in the salaries of chief clerk, editor, statistician, specialist in land-grant college statistics, specialist in higher education, and other specialists; the removal of the limit on salaries paid from the lump-sum appropriation for rural education and industrial education; provision for an assistant commissioner of education and for additional specialists in higher education and in rural and industrial education; more adequate provision for the investigation and promotion of the health of children in schools; and provision for the investigation of education and school administration in cities, for the investigation of education of exceptional children, for the investigation and eradication of illiteracy among the adult population, for a fuller study and more adequate promotion of home education, for more effective service to committees and commissions appointed by States and cities and by National and State associations to study and report on various problems of education, for the better care of the library of the bureau, for a more effective editing of the publications of the bureau, for a more comprehensive study of foreign and domestic systems of education, for more complete and accurate statistics, and for definite and scientific experiments in elementary and secondary education. A larger traveling fund should be provided for the Commissioner and his assistants to enable them to give more direct help to school officers and teachers in all parts of the country.

There should be an adequate appropriation for the care of the health of the natives of Alaska, so that the sick may be properly attended and contagious diseases held in check without encroaching for this purpose on the appropriation for the education of the natives, which is not more than is needed for the support of the schools.

For the next fiscal year there should be a small increase in the appropriation for the distribution of reindeer in Alaska.

GEOLOGICAL SURVEY.

Scope of the survey's work.—The investigations of the Geological Survey were continued along lines similar to those followed in preceding years, with the usual number of contributions to science. The appropriations for the work of the survey for the fiscal year 1914 aggregated \$1,517,920. An amendment to the sundry civil appropriation bill was offered in the House of Representatives which, if agreed to by the Senate, would have restricted the geologic work of the Federal survey to the public lands. Since the Senate disagreed to this limitation, the only effect of the proposed legislation was to call attention afresh to the question raised in the early years of the survey's history and to reaffirm the policy determined by Congress 32 years ago, namely, that while the work of the survey in investigating the mineral resources of the public lands and in classifying those lands may be considered of paramount importance the certain intent of Congress, as expressed during several exhaustive discussions of the subject, has been that the scientific work of the survey should include areas throughout the entire United States, both publicly and privately owned.

Inadequate appropriation. The strain upon the survey resulting from the handling of a greatly increased amount of work with an insufficient appropriation continues, although some relief is afforded for the fiscal year 1915 through an increased appropriation for geologic surveys. However, the water-resources work, which includes a large portion of the land-classification work, is seriously hampered through insufficiency of appropriation, the items for 1914 and 1915 being in fact \$50,000 less than those of eight years ago. An additional appropriation of at least \$50,000 for this work should be provided.

Geologic surveys. Investigations were continued in 47 States by a force of 146 geologists, and 67 per cent of the appropriation was spent in the public-land States. Systematic detailed surveys of mining districts were carried on in California, Colorado, Missouri, Nevada, Oregon, and Utah; reconnaissance studies of mining districts were made in Arizona, California, Colorado, Idaho, Montana, Nevada, and Utah, and general and detailed geologic and paleontologic work was continued in all parts of the country. A large amount of the geologic work was done in the coal and oil fields, especially in the public-land States, and the search for commercial deposits of potash was continued. Cooperative work was carried on with the State geological surveys of 14 States, as well as with the Bureau of Mines, Bureau of Standards, Office of Public Roads, Isthmian Canal Commission, Smithsonian Institution, Carnegie Geophysical Laboratory, and the marine biological station at Tortugas.

Surveys in Alaska.—The fact that the appropriation for the continuation of the investigation of the mineral resources of Alaska was not made until June 23, 1913, much curtailed the field season of several of the parties, and thereby greatly increased the cost of the work. Out of a total of 14 field parties only 5 had a full season's work. The loss in time, due to the delay in the appropriation, amounted to an average of one month, or 29 per cent, for each of nine field parties. A careful estimate by the survey shows that the actual monetary loss occasioned by the delay—that is, expenditure for which there was no return—was \$7,120, or over 7 per cent of the Alaska appropriation. The delay of the field work and consequent change of plans also caused a loss of efficiency which can not be expressed in figures. The delay in this appropriation and in the appropriation for 1912–13, which was not available until August 24, 1912, has put the Alaska field work nearly one year behind.

The average length of the Alaska field season is 110 days; the average time of all the parties in 1913 was 73 days. The work covered 3,500 square miles of geologic exploratory surveys, 2,950 square miles of geologic reconnoissance surveys, 180 square miles of detailed geologic surveys, 3,400 square miles of topographic exploratory surveys, 2,535 square miles of topographic reconnoissance surveys, and 287 square miles of detailed topographic surveys. In addition, 25 stream-gaging stations were maintained in Alaska for an average of 12 weeks each and considerable attention was devoted to special field problems.

Statistics of mineral resources.—Work was done on the annual report on the mineral resources of the United States for the calendar year ended December 30, 1913, the survey continuing the policy of making this volume more than a statistical compilation by treating in full the sources from which the mineral production of the country are obtained. This report is, in fact, an annual inventory of the Nation's mineral resources. The separate reports on each mineral product considered are, as soon as prepared, printed as advance chapters of the volume and widely distributed. On June 30, 1913, 33 chapters had been published or were in press. Preliminary first-of-the-year estimates of the production of the principal minerals in 1913, based usually on 11 months actual returns and estimates for the twelfth month, were given to the newspapers in the form of special press statements during the latter part of December, 1913, and in January, 1914.

Topographic surveys.—New areas amounting to 18,808 square miles were topographically mapped, making the total area surveyed to date in the United States 1,197,782 square miles, or 39.6 per cent of the entire country. In addition, 3,526 square miles were resurveyed, making a total for the year of 23,098 square miles. In addition, 342

square miles were surveyed in Hawaii. In this work 18 States and Hawaii cooperated with the Federal survey. The technical topographic field force numbered 166. In addition, 47 technical field assistants were employed during the field season.

Water resources.—Investigations of the water resources of the country suffer through lack of funds, the present appropriation being only \$150,000. It is only through extensive cooperation with other Federal offices and other organizations, as well as a number of States, that the relatively large amount of work carried on can be accomplished. At the close of the year gaging stations were being maintained at 1,230 points, exclusive of 25 in Alaska and 141 in Hawaii. In addition, records were received from about 350 stations maintained by private enterprises. The technical force numbered 76. Seventy-four per cent of the appropriation was spent in the public-land States, largely in stream gaging.

Land classification.—Land classification work continues to be somewhat in arrears in spite of the utmost efforts to bring the work up to date. Nearly 9,250,000 acres of land withdrawn for coal classification were classified and restored to entry; nearly 1,300,000 acres of coal lands were appraised and were made available for purchase at the appraised prices, making a total of appraised coal lands of more than 19,500,000 acres. The average price of these lands is slightly less than \$40 an acre. Examinations were made of phosphate lands approximating 1,700,000 acres which will result in extensive modification of the outstanding withdrawals by large restorations and much smaller additional withdrawals. More than 2,400,000 acres of land in the various Indian reservations have been classified in connection with the disposition of Indian lands by the Office of Indians Affairs. Enlarged homestead designations were recommended during the year to the extent of 33,102,289 acres.

Publications.—The number of books distributed during the year was 586,514, and the number of maps and geologic folios 519,197, a total of 1,105,711. Of these 338,253 maps were sold. The amount of money received and turned into the Treasury from the sale of publications was \$28,596.71. During the year 171 reports were published, 42 were reprinted, 89 new topographic atlas sheets were engraved and printed by the survey, and 26 other maps were issued, with total editions, including reprints, aggregating 1,052,516. A large amount of additional work was done under contract for other departments through the Government Printing Office.

Administrative branch.—The official mail showed an increase of 8 per cent in incoming and 20 per cent in outgoing pieces, which numbered 255,502 and 365,989, respectively. The roll of survey members holding secretarial appointments numbered at the close of the year 891, a decrease of 2.

RECLAMATION SERVICE.

Increasing the number of farm homes and extending the area of productive lands in the United States are the objects of the work of the Reclamation Service, made possible by the act of June 17, 1902.

In the 12 years which have elapsed since the passage of the act, large projects of water storage, diversion, and development have been initiated, the principal works constructed, and water brought out to an extent sufficient to supply over 1,300,000 acres of land. The foundations thus laid and the works thus built are planned with a view to expansion to double this area, and it is possible with relatively little additional cost to extend or complete the details of construction until nearly 3,000,000 acres have been supplied with water.

That a certain degree of success has been attained under the act is indicated by the fact that during 1913 the crop production on the areas already supplied with water exceeded \$15,700,000, and also by the further fact that during the spring of 1914 additional areas of heretofore untilled land were being subdued and brought into productive condition. This return of \$15,700,000 was received from over 16,000 farms from which the crop production was valued at an average of \$24.50 per acre.

It should be borne in mind, however, that the total crop production of the year 1913 was burdened with charges due the reclamation fund for that fiscal year, amounting to nearly 16 per cent; that is to say, of the \$15,700,000 produced over \$2,500,000 was due to the United States under the terms of the reclamation law. The accrued charges for 1913 include water rentals on land as to which no construction charges had been assessed and also charges against land not under cultivation.

The better knowledge of the opportunities and limitations of irrigation development, especially as brought out by a thorough study of actual crop production, has led to an appreciation of the fact that the average man on new land and under new conditions can not develop the land, support his family, and at the same time return the cost of the water in as short a period as that previously estimated. Effective agitation for extension of time of payment from 10 to 20 years resulted in the passage of the reclamation extension act on August 13, 1914.

The principal object of this act is to give to those homestead entrymen and water users who are resident upon their farms and who are cultivating a portion of them easy terms during the first few years and then later, when better prepared, somewhat heavier burdens, these coming when the lands are presumably brought to a higher degree of productivity.

The new entryman, for example, may pay at the time of making water-right application 5 per cent of the construction charge; if this is \$50 per acre he pays down \$2.50 per acre, or for 40 irrigable acres \$100. The next four years he has nothing to pay on account of the building charge, but must keep up the operation and maintenance cost. At the end of the fifth year he resumes the 5 per cent payment on the principal (no interest being charged) and later 7 per cent, until the entire amount of the principal has been paid.

In the case of lands for which application has already been made for water rights and which are obligated under the former law to make payment in 10 years the terms are modified, so that only 2 per cent is required during the first four years, then 4 per cent, and next 6 per cent on the portion of the construction charge unpaid at the time the new agreement went into effect.

In all cases the landowner must pay the cost of the operation and maintenance. These terms also are conditional upon the reclamation for agricultural purposes of one-half of the irrigable area within three years and three-fourths within five years.

The reclamation act required originally that an irrigation project be built in each of the States named in the law; but in putting this requirement into effect two or more large works have been initiated in some of the States. The general plan pursued has been to lay out each project in a broad, comprehensive manner so as ultimately to utilize the available water and land to its full capabilities.

While some of the projects are practically completed others are in various stages of construction; extensions or additional works are being built from time to time as necessity demands or as funds are available. On all of the projects, however, some land is under irrigation, and experience is being gained by the farmers in subduing the soil, in finding the crops best suited to the conditions, and in developing the markets. The increase of farm area is going on coordinately with the extension of the canal system, although at many points the works are completed to a degree where they can deliver water to twice the area that is being actually utilized.

By thus building up the works hand in hand with the agricultural development of the country it is possible to utilize the experience which is being obtained in the operation and management of the works in perfecting the details of construction of the additional canals or distributing systems. Many improvements are thus being made from time to time, due to the fact that it has been impossible to anticipate in all regards the peculiarities of climatic or other conditions which govern the best type of structure for the particular irrigation system.

But while this policy of carrying on simultaneously the construction of a large number of irrigation works and of inaugurating new

ones without awaiting the completion of the old may thus be defended, there comes a point where such policy must of necessity cease. The resources of the reclamation fund are now overburdened and the projects under way can not be completed within a reasonable length of time unless there shall be large accessions to the fund. The date of completion must be further delayed by the reduction of annual collections of construction charges by reason of the 20-year extension act unless there shall be found some other means for the replenishment of the fund. The initiation of new projects can now only be undertaken at the cost of certain delay in the completion of those under way. Such delays will not only prevent the largest and most beneficial utilization of the works planned and in process of construction, but, inevitably, must increase their cost, and cause them to suffer the depreciation that comes from disuse. Lands will be withheld from cultivation, canals and structures will deteriorate, and the repayment to the reclamation fund of the cost of such works will be put off. While interest is not chargeable to the users of Government irrigation works, nevertheless account should be taken of the loss of interest on this investment in determining the future construction policy. Every year of delay in completing and opening these works to the use for which they are intended causes a heavy loss, not only of interest on the sum invested but in the annual depreciation of such portions as have been completed or partially completed. The annual maintenance of partially completed works is a heavy charge. A net investment of \$84,000,000 with interest computed at only 2 per cent involves an annual charge of \$1,680,000. The total accruals of construction charges for the fiscal year 1914 amounted to only \$1,340,435.66. The amount collected was only \$251,679.64. Every consideration urges the wisdom of early completion of works now under way and the most speedy possible realization of that moment when all the reclamation land under such works shall be made productive and contributory to the reclamation fund.

Lands withheld from occupation and cultivation awaiting completion of irrigation works are lands wasted. If in private ownership, such lands increase rapidly in price. When sold to the cultivator such lands impose upon him so heavy a burden that he finds difficulty in meeting the Government's charges. If public lands entered as homesteads the settlers impoverish themselves while waiting for the water to come in vain and useless efforts to wrest an income from the sterile and inhospitable soil. Every consideration of humanity and of business sagacity argues for early completion.

The table below gives a summary of the results accomplished by the Reclamation Service, from the standpoint of construction,

to June 30, 1913, and to June 30, 1914. One of the notable features is that 113,000,000 cubic yards of earth, rock, etc., have been moved since the service was initiated in 1902. There have been built 8,500 miles of canals and distributing systems, 86 tunnels with an aggregate length of nearly 25 miles, over 700 miles of wagon roads, and 78 miles of railroads, etc.

Summary of results of United States Reclamation Service, June 30, 1914.

		To June 30, 1913.		To June 30, 1914.	
		<i>Acres.</i>	<i>Farms.</i>	<i>Acres.</i>	<i>Farms.</i>
Lands:¹					
Service was prepared to supply water to		1, 290, 107	26, 674	1, 343, 193	27, 115
Under contract—					
Water rights		431, 457	8, 786	416, 644	8, 559
Rental contracts, etc.		510, 815	12, 168	566, 843	12, 416
Total under contract		942, 272	20, 954	983, 487	20, 975
				To June 30, 1913.	To June 30, 1914.
Available reservoir capacity				acre-feet..	
Canals and ditches:					
Canals over 800 second-feet capacity				miles..	
Canals 301 to 800 second-feet capacity				do.	
Canals 50 to 300 second-feet capacity				do.	
Canals less than 50 second-feet capacity				do.	
Waste-water and drainage ditches				do.	
Total canal and ditches				do....	
				7, 961	8, 555
		To June 30, 1913.		To June 30, 1914.	
		Number.	Length.	Number.	Length.
Tunnels.....		77	<i>Feet.</i> 117, 760	86	<i>Feet.</i> 129, 341
				To June 30, 1913.	To June 30, 1914.
Dams—Storage and diversion:					
Masonry		cubic yards..		868, 176	1, 346, 904
Earth		do....		7, 955, 067	8, 817, 236
Rockfill and crib		do.....		700, 409	704, 784
Total		do.....		9, 523, 652	10, 868, 924
		To June 30, 1913.		To June 30, 1914.	
		Length.	Volume.	Length.	Volume.
Dikes or levees.....		<i>Miles.</i> 82	<i>Cubic yards.</i> 3, 697, 228	<i>Miles.</i> 85	<i>Cubic yards.</i> 3, 790, 950

¹ It is estimated that the irrigable area of the 28 projects on completion will be about 2,918,600 acres, and will include over 58,000 farms.

Summary of results of United States Reclamation Service, June 30, 1914—Continued.

	To June 30, 1913.		To June 30, 1914.	
	Concrete.	Wood.	Concrete.	Wood.
Canal structures:				
Costing over \$2,000.....	576	51	645	75
Costing \$500 to \$2,000.....	1,152	178	1,264	206
Costing \$100 to \$500.....	5,715	3,495	5,978	3,748
Costing less than \$100.....	5,044	34,022	5,622	37,087
Total.....	12,487	37,746	13,509	41,116

	To June 30, 1913.		To June 30, 1914.	
	Number.	Length.	Number.	Length.
Bridges:		<i>Feet.</i>		<i>Feet.</i>
Steel.....	81	5,033	84	5,337
Combination.....	302	6,910	195	6,094
Wood.....	2,765	56,325	3,386	70,603
Concrete.....	191	2,632	210	3,191
Total.....	3,339	70,900	3,875	85,225
Culverts:				
Concrete.....	1,130	47,897	1,120	51,105
Metal.....	672	16,779	880	26,338
Terra cotta.....	196	9,679	306	16,191
Wood.....	1,853	46,080	2,329	54,628
Total.....	3,851	120,435	4,635	148,262
Pipe:				
Concrete.....		433,212		454,584
Metal.....		32,287		153,638
Terra cotta.....		181,339		451,928
Wood.....		184,149		192,036
Total.....		830,987		1,252,186
Flumes:				
Concrete.....	28	3,039	29	3,123
Metal.....	238	74,712	297	90,126
Wood.....	1,171	323,640	1,264	328,375
Total.....	1,437	401,391	1,590	421,624
Canals lined:				
Concrete..... miles.....				86.4
Wood..... do.....				1.7
Buildings:				
Offices.....	65		74	
Residences.....	426		483	
Power plants.....	14		13	
Pumping stations.....	61		63	
Barns, storehouses, etc.....	332		385	
Total.....	898		1,018	

	To June 30, 1913.		To June 30, 1914.	
	Number.	Depth.	Number.	Depth.
Wells.....	348	<i>Feet.</i> 26,237	361	<i>Feet.</i> 28,717

Summary of results of United States Reclamation Service, June 30, 1914—Continued.

	To June 30, 1913.	To June 30, 1914.
Communications:		
Roads.....miles..	697	733
Railroads.....do..	51	78
Transmission lines.....do..	351	402
Telephone lines.....do..	2, 331	2, 376
Phones.....do..	927	1, 003
Power developed:		
Water.....horsepower..	28, 886	29, 126
Steam.....do..	3, 600	4, 250
Total.....do..	32, 466	33, 376
Excavation:		
Class 1, earth.....cubic yards..	87, 492, 753	100, 432, 925
Class 2, indurated material.....do..	6, 296, 118	6, 668, 156
Class 3, rock.....do..	5, 456, 897	6, 067, 391
Total.....do..	99, 245, 768	113, 168, 472
Coal mined.....tons..	30, 693	39, 474
Riprap placed.....cubic yards..	419, 790	616, 493
Paving placed.....square yards..	511, 322	564, 037
Concrete placed.....cubic yards..	1, 344, 908	1, 933, 263
Cement used.....barrels..	1, 533, 544	1, 965, 499
Cement manufactured by United States.....do..	338, 452	338, 452
Sand-cement manufactured by United States.....do..	95, 435	597, 916

BUREAU OF MINES.

Province and duties of the bureau.—By the new organic act approved February 25, 1913 (37 Stat., 681), the scope of the work that the bureau is to do was greatly broadened and made more nearly commensurate with the needs of the world's greatest mining industry. Under the terms of this new act the bureau was directed to undertake inquiries and investigations concerning mining with a view to increasing safety and efficiency, improving health conditions, and preventing waste in the mining, quarrying, metallurgical, and other mineral industries, and to disseminate information concerning the subjects investigated. It is to be regretted that, although the legislation directing the bureau to undertake a larger work was the result of a general and urgent demand throughout the country, no adequate provision has yet been made for carrying out such work.

The two phases of this work that are of the greatest national concern are the safeguarding of the lives of miners and of employees in the metallurgical and mineral industries and the development of more efficient preparation and use of the mineral resources of the Nation.

Larger features of the work of the Bureau of Mines.—The Bureau of Mines has now been in existence four years, and its efforts have been directed chiefly to investigating problems having to do with the causes and prevention of coal-mine explosions and the safeguarding of the lives of coal miners. In addition, the bureau has been testing coal and other mineral fuels belonging to or for the use of the Gov-

ernment of the United States, and during the past fiscal year has undertaken investigations looking to greater safety and the prevention of waste in metal mining and in miscellaneous mineral industries, and has done work in several oil and gas fields with a view to eliminating large wastes of natural gas.

The training and demonstration work of the bureau, which is largely pioneer educational work, is being supplemented by the active cooperation of an increasing number of mine owners, who are organizing and maintaining rescue crews. Over 1,200 sets of rescue apparatus were purchased and installed by mine owners during the year.

Though the death roll in our mines continues to be far greater than it should be, there is good reason to believe that the agencies now at work are making mining safer. During the calendar year 1913 the number of disasters in coal mines in which more than 5 men were killed was 8, as compared with 13 similar disasters in 1912. The number of fatalities per 1,000 men employed in metal mines was 3.54 in 1913, as compared with 3.91 in 1912, and the number of men killed in and about the various quarries in the United States was 183 in 1913, or 30 less than in 1912.

Improved mining explosives.—The Bureau of Mines, with the cooperation of the manufacturers of explosives, has brought about the manufacture of what are termed permissible explosives, which are much less dangerous for use in the presence of inflammable gas or coal dust than is black powder or dynamite. During the calendar year 1913 the quantity of these explosives used in coal mining was 21,804,285 pounds, an increase of 13,000,000 pounds over the quantity used in 1909. Not a single mine disaster should be attributed to the use of these explosives, while dynamite and black powder are responsible for many terrible disasters.

Prevention of mine explosions.—At its experimental mine near Bruceton, Pa., the bureau has made large-scale tests to determine the manner in which rock or shale dust may be used to prevent or arrest coal-mine explosions, and has sought to ascertain the methods best adapted to American mines.

In conducting this work for the increase of safety and efficiency in the mining industry, the bureau has adopted the following general plan of cooperating with other agencies: (1) That the National Government conduct the necessary general inquiries and investigations in relation to mining industries and disseminate in such manner as may prove most effective the information obtained and the conclusions reached; (2) that each State enact needed legislation and make ample provision for the proper inspection of mining operations within its borders; (3) that the mine owners introduce improvements with a view to increasing safety and reducing waste of resources as rapidly as the practicability of such improvements is demonstrated;

and (4) that the miners and mine managers cooperate both in making and enforcing safety rules and regulations as rapidly as these are shown to be practicable.

Some of the more important results of the bureau's work.—Probably the most notable benefit from the work of the bureau has been the development of the movement for greater safety and better health conditions in the mining, metallurgical, and other mineral industries of the country, and the gaining of the cooperation of all possible agencies in behalf of this movement.

The mine-rescue and first-aid work of the bureau is carried on through its mine-rescue stations and cars. During the fiscal year employees of the bureau were responsible for saving the lives of 7 miners, and since the beginning of the work bureau employees have saved fully 100 men. A far larger number were saved by men who had been given training by the bureau.

During the fiscal year 1914, by means of the rescue cars and stations, more than 8,500 miners were trained in mine-rescue and first-aid methods. Approximately 50,000 miners visited the cars and stations, and nearly 30,000 attended the mine-safety lectures and demonstrations.

Methods of preventing waste of natural gas, petroleum, and coal products.—During the year the Bureau of Mines, which has supervision of oil and gas wells on Indian lands, was, at an expenditure of approximately \$10,000, directly responsible for the possible saving in one State, Oklahoma, of natural gas valued at more than \$10,000,000. Through use of the mud-fluid system of well drilling, as developed by engineers of the bureau, gas in formations lying above oil sands can be sealed until such time as it can be utilized, and the drowning of oil sands by water in overlying beds can be prevented.

An investigation of losses attending the manufacture of coke in beehive ovens has shown that in 1913 the value of the by-products lost from the use of beehive ovens in the United States amounted to over \$75,000,000. The bureau is now investigating methods of coking coal and the development of a greater utilization of tar and other by-products in this country.

Results of mineral technology investigations.—The bureau has published the results of an investigation of brass-furnace practice in the United States, which shows that the annual preventable waste of metals at brass-melting plants amounted to \$1,500,000.

As a result of a preliminary investigation of carnotite and other uranium and radium bearing minerals in Colorado and Utah, the bureau has devised processes and methods for treating the ores and extracting the radium on a large scale. The present indication is that radium can be profitably produced for at least one-third of the present selling price.

An examination of deposits of kaolin, feldspar, and other pottery materials in the Eastern States and tests of materials now wasted at the mines has shown the possibility of using these with profit to the operator and of making American potteries independent of foreign sources of supply.

Fuel investigations.—During the fiscal year 1914 over \$8,000,000 worth of coal was purchased for the Government under specifications prepared by the Bureau of Mines, or under its advice. As a result of the work done by the bureau the Government saved more than \$200,000 as compared with prices paid in previous years. Moreover, in 1914, some 20 large cities purchased coal on the specification basis, influenced by the results obtained by the Federal Government, and a number of these cities have reported savings of thousands of dollars.

Some urgent needs of the bureau.—From the day of its establishment the bureau has lacked facilities for meeting adequately the many demands made on it by the Government and by the general public; and the number and urgency of these demands has increased much more rapidly than have the funds and the facilities provided, so that the bureau has been able to do only a small part of the work asked of it.

Some needed work that is being retarded by lack of adequate funds is mentioned below.

More than 7,000 persons have been killed and more than 25,000 injured by falls of roof and coal and by mine caves in the coal mines of this country during the past five years. Yet the bureau has not been enabled to undertake the investigations necessary for determining practicable preventive measures suited to existing conditions.

The investigation of mining explosives should be extended to cover the explosives used in metal mines, quarries, and tunnels with the aim of bringing about the general use of explosives that are less dangerous than some of those now used.

From the lack of proper safety appliances in the mines of this country, more than 3,500 men have been killed and nearly 20,000 have been injured during the last five years. The bureau should be provided with the means to enable it to search out, test, and recommend regulations regarding safety devices that are now in use, or should be used, in the mines of this country.

Each day poor ventilation and resulting bad air injure the health of many miners. Among the questions that the bureau should study are the efficiency of ventilation of metal mines and the methods of lessening lung diseases in those mines where the rock dust is siliceous.

State mine inspectors, miners, and mine operators in different parts of the country have urged that the bureau should be provided with the means of extending its investigations of electricity to cover the use of electricity in metal mining and tunneling.

The need of more extended investigations to lessen waste of mineral resources is evidenced by the present waste, in large measure unnecessary, of these resources, which, it is estimated, amounts to not less than \$1,000,000 a day.

The United States produces 63 per cent of the world's supply of petroleum, and the capital invested in the petroleum industry in this country is nearly half a billion dollars. Practical operators estimate the waste or loss of petroleum in drilling wells, developing fields, transporting and storing the oil as not less than \$50,000,000 annually, and admit that a large part of the loss is preventable. There is urgent need of inquiries to determine how further waste of this invaluable natural resource may be minimized.

In the mining of coal during the calendar year 1913, the loss in coal wasted or left underground in such condition as to be unminable is estimated at 300,000,000 tons. A careful preliminary inquiry indicates that at least one-half (150,000,000 tons) of this yearly waste is preventable. The bureau has planned inquiries and investigations with a view to bringing about more efficient methods in the industry without seriously increasing the cost of coal to the consumer.

In the metallurgy of iron and steel alone more than 150,000 men are employed, and 30,000 to 35,000 men are injured annually. In all those branches of the mineral industry that are conducted above ground there are 1,300,000 employees, of whom each year fully 100,000 are injured and a considerable number killed. In addition, poor health conditions in many metallurgical plants each year impair the health of a large number of persons. The bureau has lacked the money with which to carry on investigations with a view to lessening this waste of national strength.

The number of mine-rescue cars now in service and the personnel of these cars are inadequate for the work that they should do in order to effectively carry the campaign for greater safety into all the mining districts of the country within a reasonable time. The number of cars in service should be increased to 15, the 8 cars now in use should be strengthened, the personnel of each car should be increased, and each car should be kept in service throughout the year.

There is need of making special fuel-testing investigations for other branches of the Government. These investigations should include a special study of the possibility of increasing efficiency in the heating and power plants of the United States through adapting the equipment to local fuels; an investigation in regard to heating and power plants at Army posts, naval stations, and other Government establishments in different parts of the country; and a special comparative study of fuels for use in the aviation work of the United States Army.

In addition the bureau needs funds to cover the cost of removing the plant at Pittsburgh to the new building now in course of con-

struction there and to purchase the grounds at Bruceton, Pa., on which is situated the experimental mine.

TERRITORIES.

Since the transfer under Executive order of July 15, 1909, of the supervision of affairs in Porto Rico to the Insular Bureau of the War Department the former Territories of New Mexico and Arizona have been admitted as States, and there now remains under this department the supervision of but two Territories—Alaska and Hawaii.

ALASKA.

The report of the governor shows that Alaska has made steady progress during the fiscal year, and, generally speaking, mining, industrial, commercial, and other conditions have been satisfactory. Alaska, as a country of rich and varied mineral and other resources, is now commanding greater attention than at any time in its history. The development of lode mines in southeast and southwest Alaska and in northwest Alaska continues on an extensive scale, this being particularly noticeable on the southern coast, where mining enterprises of large magnitude are actively under way. Placer, or alluvial, gold mining has more than kept pace during the year with the record of 1913, and the production for the calendar year will exceed that of the previous year. The use of dredges in placer mining is steadily increasing, and hydraulic mining is being extended from year to year. A number of new districts have been added to the list of placer gold producers. In the strictly placer mining regions the gold production has decreased from that of the years subsequent to the first discoveries, due to the exhaustion of the richer areas, and this has been followed by a decline in the volume of business. On the other hand, there has been a steady increase in the lode mining districts, where mining, commercial, and industrial progress has been more marked than elsewhere in the Territory. Increased attention is being given to the development of lode mines in southern Alaska and the interior country, particularly in the Tanana Valley.

This is not alone due to the rich promise these sections hold out to the miner, farmer, and business man because of the known extent and variety of natural resources, but also to the extensive developments which it is believed will follow from the construction by the Government of a system of railroads. The construction of railroads will open to development virgin regions which are now practically inaccessible, but which are known to contain almost unlimited mineral, agricultural, and other resources. These railroads should be supplemented by wagon roads and trails. Alaska embraces hundreds of thousands of acres of low-grade alluvial gold deposits

which can not be worked at a profit because of the lack of transportation facilities. When these shall have been provided, the increase in the output of gold will assume large proportions.

There has been a steady increase in the population of southeast and southwest Alaska during the year, the increase in the southern section being most notable, due to the extensive mining developments and the growth of industrial and commercial business. A number of farmers have settled in the Cook Inlet and other districts and engaged in farming, stock raising, and dairying. In the interior and in northwestern Alaska the population has remained practically stationary. A study of the census reports shows that the population of Alaska has been of slow growth, except in the years covering the period between 1897 and 1900, when there was a large influx of people owing to gold discoveries. The earliest census taken was in 1880, when the white population numbered only a few hundred. The white population at the present time is estimated at 39,000, an increase of 3,000 over the estimate of last year. The last decennial census was taken in 1910, and it is probable that the decrease in the number of natives, except in the more remote regions, has been relatively small.

Alaskan affairs have received much favorable publicity during the year, due to the action of the national administration in initiating a rational and liberal policy of development for the Territory. It has been demonstrated that Alaska is not a perennially ice-locked wilderness, but a country magnificent in the extent and variety of its natural resources, a country of marvelous scenic beauty and grandeur, much of it having an equable climate; a country, if not literally flowing with milk and honey, at least quite capable of producing both in abundance, and of affording comfortable homes for several millions of people.

The readjustments in the world's commerce necessitated by the European war have imposed new conditions on many industries, including mining, and it has developed that several American industries depend either in whole or in part on mineral products imported from Europe. Therefore it may be of interest to note that, besides gold, silver, copper, and coal, Alaska has lead, zinc, tin, tungsten, iron, antimony, nickel, cobalt, bismuth, cinnabar, barite, petroleum, gypsum, marble, limestone, and shales, all awaiting development. Among the miscellaneous nonmetallic minerals are garnets, jade, graphite, asbestos, mica, sulphur, and volcanic ash or tuff.

The volume of merchandise shipments, including precious metals and copper, between Alaska and the United States and between the Territory and foreign countries in the fiscal year 1914 amounted to \$61,076,692. Shipments of domestic merchandise from the United States to Alaska showed an increase of \$1,749,912 over the previous fiscal year. There was an increase of copper production of \$296,937

over that of 1913, and an increase of \$44,268 in marble exports. A decrease in the volume of exports is shown over that of the previous fiscal year, due to the falling off in gold production, which was curtailed by reason of a shortage of water in the placer mining districts, and to the decrease in the salmon pack caused by prevailing low prices.

There has been no railroad construction in Alaska for the past several years. The total railroad mileage is 466 miles; of the railroads represented by this mileage only the White Pass & Yukon, the Copper River & Northwestern, and the Tanana Valley Railways, aggregating 261.4 miles of track, have been operated as common carriers in recent years. On March 12 last Congress passed a law providing for the construction of a system of railroads including a trunk line or lines from some point or points on the Pacific coast of Alaska to the interior, with necessary branch lines to the coal fields. An engineering commission was appointed by the President early in May to investigate available railroad routes. The commission began active work the following month, and it is probable that the surveys will have been so far advanced as to enable the commission to submit a report of their investigations to the President before the close of this year.

Four agricultural experiment stations are maintained in Alaska, and the work under way has been prosecuted the past year with much success. Each of the stations is assigned a particular line of work, the headquarters station being at Sitka, where experiments in horticulture, orcharding, and nursery culture are carried on. No grain growing is attempted because of the heavy rains in late summer and fall when the grain matures, which make it impossible to save the crop. Determined efforts are being made to develop varieties of berry and bush fruits which shall be better suited to the climate than such as can be obtained outside of Alaska. A small orchard in which many varieties of early apples are being tested is doing well.

At Kodiak station two herds of cattle are maintained, one a dairy herd, the other a breeding herd. Settlers in Alaska need an all-purpose cow. The station has a small flock of sheep which have been bred there and which, therefore, are acclimated and doing well. At Rampart, in the Yukon Valley, there is a grain-breeding station, and the work is devoted almost wholly to the development of varieties of grains which shall be early enough to mature in the short summer of the interior. Several varieties of barley have already been developed which are better suited to the conditions than those obtained from the outside. Oats and wheat are treated in the same manner. One of the important lines of work at this station is to develop a hardy alfalfa suited to the climate of Alaska. Some hardy alfalfas from Siberia have been introduced and are doing well. In the summer of 1913

several varieties matured seed. This fact is of importance. If an alfalfa can be established that will produce seed then all suitable portions of Alaska can be planted with this valuable forage plant, and, as a result, live stock can be raised wherever alfalfa is grown, and the fertility of the soil can be maintained since alfalfa is a nitrogen gatherer from the air. At Fairbanks station grain growing is pursued on a larger scale. This station is devoted chiefly to farm demonstration work for the benefit of the many farmers located in that vicinity. Experiments are made in potato culture with the result that the station produces the best potatoes that perhaps are grown in the Territory. The work of the stations demonstrates year by year more fully the already well-established fact that Alaska has a large agricultural capacity, but a matter of first importance is to learn not only what crops can best be grown but how to grow them, for the crops grown in the States and the general methods followed there are not adapted to this far northern climate.

Tongass National Forest in southeast Alaska and Chugach National Forest in the southwest section comprise the national forests of the Territory. Of these Tongass is by far the most important. The total receipts of the Tongass and Chugach National Forests for the fiscal year were \$58,781.35. The total cost of administration was \$38,763.61. The number of homesteads surveyed during the year was 36 and the total number of timber sales was 348. The total amount of timber cut on the national forests was 43,756,712 board feet. The total receipts of the national forests are deposited to the credit of the United States Treasury, and the cost of administration is covered by appropriation by Congress. All persons living on or near the national forests of Alaska are permitted to take free of charge all the wood they need for their own domestic purposes. Timber needed by prospectors in the actual development of their claims, prior to reaching the shipping stage, is given free of charge. Investigations with favorable reports were made during the year throughout the Tongass National Forest relative to the possibility of the manufacture of wood pulp and paper. The cheap power and vast amount of available timber make it reasonable to assume that southeast Alaska will in the immediate future be one of the principal pulp and paper centers of the world.

Although the fisheries of Alaska are already developed very extensively, there is room for further expansion along legitimate lines without threatening the future of the industry. But to insure and safeguard this great natural resource there should be additional legislation empowering closer supervision and regulation, while at the same time there is also need of further study of conditions affecting the habits and movements of the several species of salmon, halibut, cod, herring, and other fishes in Alaska waters.

This great industry demands the protecting care of the Federal Government. It has been and still is the victim of neglect, waste, and spoliation, and these conditions are principally attributable to the insufficiency of funds to employ the necessary personnel to enforce laws and regulations for the protection of the fisheries and for their proper supervision and extension. Fish traps and other fishing gear have been operated without regard to law or regulations. The waste of fish at the canneries is excessive and should be prohibited and the operators should be compelled to dispose of the offal or waste products in such a manner as will not pollute the waters, as is now the case. The five fish-cultural stations now operated by private enterprise should be taken over at a fair valuation by the Federal Government and operated under the direction of the Bureau of Fisheries, together with the two Government hatcheries; also at least five additional hatcheries are needed at appropriate places from Bristol Bay to southeast Alaska. Material aid of this character, together with intelligent regulation of the fisheries in the matter of allowing a reasonable escapement of breeding salmon by prohibiting the operation of both traps and seines near stream mouths will assure, it is believed, a constant maximum supply of salmon. Salmon canning is the only branch of the fishing industry upon which taxes are levied. In the calendar year 1913 there were 21,721 persons engaged in all branches of the industry. These included 11,892 whites, 4,164 natives, 2,061 Chinese, 1,693 Japanese, and 1,911 miscellaneous, which head covers Filipinos, Koreans, Kanakas, Mexicans, and others. It is noteworthy that upward of 4,000 natives were given employment. There was a decline of 2,542 in the total number of persons employed in 1913 as compared with 1912. This was due chiefly to the fact that a number of fishing establishments were not operated. The total investment in Alaska fisheries in 1913 was \$37,047,205, a decline of \$1,216,152 from 1912. The amounts invested according to each of the important fisheries were: Salmon, \$34,952,913; halibut, \$2,360,025; whaling, \$891,780; cod, \$581,107; herring, \$261,480. Geographically, the investment is distributed as follows: Southeast Alaska, \$16,527,854; central Alaska, \$6,628,335, and western Alaska, \$13,791,116. During 1913 there were 42 salmon canneries operated in southeast Alaska, 9 less than in 1912; 14 in central Alaska, and 23 in western Alaska.

In 20 years the reindeer industry has made the natives inhabiting the coastal regions from Point Barrow to the Alaska Peninsula a comparatively civilized and thrifty people, having in their herds assured support for themselves and opportunity to acquire wealth by the sale of meat and skins. The question of a more extended market for the meat, however, is of importance, as under present conditions the market is limited and its extension is a matter worthy of

careful investigation. White men, settlers in Alaska, should be permitted to obtain herds of reindeer under the same conditions that Esquimos, missions, and Laplanders are now supplied, to the end that this food product may be more widely distributed. Nine new herds were established in 1912-13. On June 30, 1913, there were 47,266 reindeer in the 63 Alaska herds, or a net increase of 23 per cent for the fiscal year. This is considered a fair rate of increase, especially since nearly 5,000 reindeer were killed for food and skins during the fiscal year. Only 2,853 reindeer are owned by the Government, 5,047 are owned by missions, 7,834 by Laplanders, and the remainder, 30,532, are owned by 797 Eskimos and Indians, whose revenue from the industry during the fiscal year was \$66,966.

Health and other conditions among the white population continue to be excellent, Alaska being one of the healthiest countries of the world. A few cases of smallpox, imported from the States, occurred last spring, but were quickly eradicated. Among the native peoples, however, diseases of various kinds are widespread, this being particularly true in remote sections, where hygiene and sanitation are unknown. The disease most prevalent is tuberculosis, including all forms and both the active and latent types. The home conditions are largely responsible for this situation, and the only way by which the medical problem involved can be solved is by the establishment of well-equipped hospitals, the employment of physicians and nurses, the isolation of the afflicted, and the thorough education of the natives in hygiene and sanitation. The establishment of a number of hospitals at convenient points on the Pacific coast of Alaska, the Bering Sea coast, and the interior is indispensable if the natives are to have the medical care to which they are entitled from a humanitarian standpoint, if from no other. Some provision should also be made for furnishing aid to aged and helpless natives, some of whom are to be found in nearly every native community, without relatives or even friends upon whom they can rely for support. Operations for the suppression of the liquor traffic among the Indians were continued during the year, under the direction of the governor's office, excellent work having been done not only in the arrest and punishment of offenders against the law, but the activities of the special employees engaged in the work of suppressing the traffic have had a wholesome effect upon those who furnish Indians intoxicants.

The number of Alaska insane under treatment on June 30, 1914, was 181, of whom 156 were men and 25 women. Morningside Sanitarium near Portland, Oreg., where the Alaska insane are being cared for, has been inspected at proper intervals by agents of the Interior Department. Detention hospitals for the insane were constructed last year at Fairbanks and Nome, but they have not been occupied, no appropriation being available for their maintenance.

The mineral output in 1913 was 755,947 ounces of gold, valued at \$15,626,813; 362,563 ounces of silver, valued at \$218,988; 21,659,958 pounds of copper, valued at \$3,357,293; 2,300 tons of coal, valued at \$13,800; marble, crude gypsum, petroleum, tin, and lead, valued at \$253,443. The total value for 1913 was \$19,470,326, as compared with \$22,537,821 in 1912. The decrease in production is partially accounted for by a shortage of water during the mining season in the placer gold-mining districts. Thirty gold-lode mines were operated the whole or part of the year 1913; there were 7 producing copper mines, and about 700 placer mines were operated during the year.

The outbreak of war in Europe in August of this year had the effect of strongly reminding the people of Alaska that they are still largely dependent upon British Columbia and other countries for the coal they consume for domestic and industrial purposes, notwithstanding the fact that the Territory has practically unlimited quantities of high-grade coals awaiting development on a commercial basis. It was considered possible, with the presence of warships of some of the belligerent powers in the waters of the Pacific coast, that the supply of coal from British Columbia might be cut off, thus creating a serious condition among coal consumers in Alaska, and the situation seemed to accentuate the importance of the United States having a permanent source of coal supply in Alaska, together with a coaling station that would be accessible at all times. The importation of coal from the States and from foreign countries during the last fiscal year amounted to 93,101 tons, valued at \$295,123. The importations show a slight decrease over those of the previous year, due to the more extended use of fuel oil in various industries.

The expenditures by the Alaska Road Commission upon wagon roads and trails during the fiscal year were \$170,688.37, received from the Alaska fund, and a special appropriation of \$155,000, of which \$55,000 was used for the construction of a protecting dike at Valdez. The total mileage of roads completed to June 30, 1914, was: Wagon roads, 872; sled roads, 614; trails, 2,166. From the point of view of area, or population, Alaska has far less than its proper mileage of roads and this deficiency has placed a heavy handicap on the development of the country, although roads already built have lessened this handicap and the further extension of the road system will within proper limits further lessen the handicap in the same degree. A complete road system, warranted by the present state of developments in the Territory, according to carefully prepared estimates, will require the expenditure of \$7,250,000, distributed over a period of 10 years. About \$1,125,000 will accrue in that time under existing law, leaving \$6,125,000 to come from some source not yet provided. This sum could properly be drawn from the National Treasury for the purpose of developing resources of a

national possession, after precedents established in the western part of the United States and in the Philippine Islands, and later advanced to a much greater degree in the work of the Reclamation Service.

There are now 27 schools for white children, outside of incorporated towns, employing 38 teachers, and with a total enrollment of 941. There are a number of communities which are denied the privilege of educating their children because of an insufficient number of school age to entitle them to the establishment of schools. The existing law provides that there shall be at least 20 white children of school age in a community, outside of incorporated towns, before a school can be authorized. The number should be reduced to at least 15. The law also limits the amount which may be expended in the construction of a school building to \$1,000, which is frequently found to be insufficient to cover the cost, and the amount should be increased to \$2,000 or \$2,500, according to the size of the school.

The fur shipment of all kinds from Alaska in 1913 aggregated in value \$752,193.11, as compared with \$794,156.63 in 1912. The census of fur seals made in 1913 showed that the number in the herd was approximately 268,305, as compared with 215,940 in 1912. The increase in one year was therefore about 52,365 seals. The number of fur-seal skins shipped in 1913 was 2,296. With the exception of 400 skins reserved for special purposes, these were sold at St. Louis by auction in December, 1913. The gross proceeds amounted to \$56,579. Fur farming is comparatively a new industry in Alaska and is however assuming considerable proportions both in coastal Alaska and in the interior. It is believed that this industry offers great possibilities.

No coastal waters of the United States so much need thorough surveys and other aids to navigation in order to safeguard vessels and human life as those of Alaska. During the fiscal year 17 new lights, 21 buoys, and 5 beacons were added to the number of aids to navigation in Alaska waters, but more are needed. A number of navigable channels should also be "dragged," so that pinnacle rocks, which have destroyed many steamers and caused a considerable loss of life, may be charted. No vessels were wrecked or lives lost during the year.

The importance of the undeveloped water powers of Alaska for industrial use is being recognized, and a number of projects have been undertaken which promise to aid materially in the industrial development of the Territory. Probably the most important of these is the construction of a hydroelectric chemical and power plant at Speel River, near Juneau, which will ultimately develop 100,000 horsepower.

Surveys of lands in a number of localities of southeastern Alaska claimed by Indians have been authorized with the object of making

allotments to the several claimants. Some plan should also be devised to convey to Indians titles to their holdings in the various villages in which they reside. Legislation is needed defining the political status of the Metlakahtla Indians who emigrated from British Columbia in 1887, and who are located on Annette Island, southeastern Alaska. These Indians should also be given lands in severalty and encouraged to cultivate the soil.

Under the act of Congress approved March 3, 1913, 10 per cent of the Alaska fund, or so much thereof as may be necessary, is appropriated for the relief of indigent persons in Alaska. The fund is disbursed by the judges of the four judicial divisions. While the number of persons requiring such relief is relatively small, the law has been beneficial and relief has been wisely and promptly afforded wherever necessary during the year.

The powers conferred upon the Territorial legislature by the organic act approved August 24, 1912, are extremely limited, and in view of the growing importance of the Territory, industrially and commercially, both of which give promise of large expansion in the future, the powers of the legislature should be enlarged, as recommended by the President in a message to Congress in 1913.

The act approved May 11, 1908, to protect the wild game of Alaska, continues to be unsuited in several respects to local conditions in the different geographical sections. The protection of game should be directly under the control of the Territorial legislature. The number of hunting licenses issued annually is increasing.

The first examinations of Territorial banks in Alaska were made this year under an act passed by the legislature. The law provides for a banking board composed of the governor, the secretary of the Territory, and the Territorial treasurer.

With the development and growth of the Territory along industrial and commercial lines, and the promise of a largely increased population in the immediate future, an additional cable should be laid between Puget Sound and Alaska. The cables and land telegraph lines are in charge of the United States Signal Corps and the service rendered under the limitations imposed has been satisfactory.

The supply of all kinds of labor during the fiscal year exceeded the demand. In the southeastern section, where for the past few years extensive mine development and plant construction have been under way, there has been much activity, but with the major portion of this work completed there has been a consequent reduction of the number of men employed. Generally speaking, it may be said that there is always an abundant supply of labor in the several geographical divisions of Alaska, and men seeking employment should carefully investigate the labor conditions before going into the Territory. There have been no strikes during the year among either mine or

fisheries employees and the wage scales have remained practically stationary.

In 1910 the construction of a public building at Juneau was authorized, the cost of site and building being limited to \$200,000. The site was purchased for \$22,500. The number of Government offices to be housed, coupled with the fact that since the appropriation was authorized a legislature has been established and suitable quarters for it are a pressing necessity, makes it important that an additional appropriation of \$450,000 should be made. Juneau, the capital of the Territory, is the center of large and permanent mining and other industrial enterprises, the population is increasing rapidly, and the need of a public building becomes yearly more urgent. The building should also include rooms for the Alaska Historical Library and Museum.

HAWAII.

The governor of Hawaii in his annual report states that the year has not been one of notable changes. There has been slightly restricted business and diminished public works, while private improvements have continued in good volume.

Imports and exports.—While reiterated until almost trite, and in spite of years of endeavor to enlarge its range of products, the Territory of Hawaii is practically a two-crop—sugar and canned pineapple—country. When high prices for sugar obtain the imports and exports are relatively large. The past year has shown a lower average of sugar prices than the fiscal year 1913; hence the total exports and imports for the fiscal year 1914 was \$77,144,329, or \$2,330,551 less than the previous year, exports shrinking \$1,877,868 and imports \$452,683. Sugar exports fell off \$3,126,738. Pineapple exports increased \$1,006,103, and coffee exports increased \$331,629.

Customs and internal-revenue receipts.—Customs receipts were for the fiscal year \$1,184,416.12, a falling off of \$685,097.77. Internal-revenue receipts yielded \$232,974.43, an increase over the previous year of \$6,660.14.

Territorial finances.—The assessed valuations for the last half of the fiscal period decreased \$14,013,935, the total taxable valuation being \$161,187,226. Assessments are affected by section 1228, R. L. 1905, which requires valuations to be based on property of corporations, etc., as enterprises for profit, hence fluctuations occur from year to year. The income of the Territorial government was decreased by diminished receipts from the income tax, which was \$513,658.87, against \$935,480.79 for 1913, a difference of \$421,821.92. As appropriations were based on the greater income, the government is obliged to curtail expenditures wherever possible. The net cash balances in all current revenue accounts at the close of the year aggregated

\$1,105,158.21, a decrease of \$203,088.88 from last year. The total revenues collected by the Territory and counties aggregated \$4,311,731.40, a decrease of \$369,019.50, of which \$2,251,931.74 went to the Territory and \$2,059,799.06 to the counties. Out of \$3,560,178.93 available for the Territory from current revenues, including cash on hand, \$2,455,020.72 was expended.

The bonded indebtedness was not increased during the year, and remains at \$6,844,000.

Bank deposits, capitalization of corporations, and insurance business.—Bank deposits at the close of the calendar year aggregated \$16,647,665.23, a decrease of \$378,631.79, which has little significance. Domestic corporation capitalizations stood at \$175,629,693, an increase of \$2,896,615. Insurance—fire, life, and marine—was written during the year to the amount of \$91,821,563.72.

Population and its problems.—The estimated population of the Territory of Hawaii on June 30, 1914, was 219,018, exclusive of 8,373 belonging to the Army and Navy of the United States. This is an increase of 37,016 over the census of 1910. The notable race increases are 10,041 Japanese, 2,236 Spanish, 3,046 other Caucasians, exclusive of the Army and Navy, and 12,271 Filipinos, while the Army and Navy increased 6,535 since 1910. Those of Hawaiian pure blood have notably decreased in the past four years, but this has been offset by the increase of part Hawaiians, making a net increase of 239. It will require the deepest study and wisest judgment to adjust the interests of so many nationalities if the future increase is along the lines indicated by statistics.

Health.—There has been no notable disturbance in normal health conditions.

Labor.—The importation, under the auspices of the Territory, of labor from Europe has ceased. It can not be said to have been successful. Should it again become necessary the plans and procedure should be changed. The facilities afforded by the Panama Canal route should overcome many difficulties that obtained via the Cape Horn route. Filipino labor has much in its favor and it is only just to give those of that race the credit due them. On some plantations they are considered the best and most courteous labor ever thereon employed. Labor is plentiful and apparently well contented, and seems to be growing markedly more efficient.

Public lands.—It has been most unfortunate that in the past there has been no practical presentation of the areas and analysis of the public lands of this Territory. From the lack of it there has been a total misconception locally and abroad of the land resources of the Territory. It must be remembered that the Territory of Hawaii is very mountainous and that in the center of each of the four larger

islands the elevation ranges from 4,040 feet to 13,825 feet, hence the amount of arable land is comparatively very restricted. The greater portion of Hawaiian products are grown on less than 320,000 acres.

But 59,044.45 acres of arable agricultural land remain in the public domain. While 487,884.64 acres of public lands are classified as pastoral, much of that area is erroneously so designated, as it is simply a succession of black lava flows, some in its original desolate state and some with sparse bushes and weeds, which in wet seasons of the year furnish feed for cattle. In dry times however, the cattle must be driven elsewhere for pasture.

Homesteading.—During the year 227 homesteads, covering an area of 7,234.07 acres, valued at \$84,030.95, were taken up. Twenty-two homesteads, covering 934.16 acres, valued at \$12,825.40, were surrendered during the year. The low price for cane obtaining during the year and the prospects of very low prices for pineapples have been rather discouraging to the homesteaders.

Agricultural pests.—The Government is still engaged in seeking in various parts of the world for parasitic enemies of the pests that are so destructive to fruits, etc., particularly the Mediterranean fruit fly.

Forest reserves.—These forest reservations have been practically completed so the water supplies of the Territory are fully protected. There remains only certain fencing and planting to be done, when the forest problems will be simplified to care and proper forestry practice.

Transportation.—During the year two large steamers with large passenger accommodations have been added for the trade between the Territory and the Pacific coast. Steamers are more and more making several Hawaiian ports on their round trips and enlarging their calling ports on the coast.

Harbor accommodations are gradually being increased and are adequate for any reasonable demand at present, although Honolulu Harbor needs enlargement for anchorage.

Public works.—There are few works of importance in hand at present. The larger items will await the placing of an issue of Territorial bonds.

Education and its problems.—This is a pressing problem, as present methods seem to draw youths away from certain classes of employment the Territory can supply. The wisdom of this is worthy of deep study. The Territory of Hawaii has been distinctly and generously a supporter of education in practical forms and also of what may be termed advanced theories of pedagogical and ethical types, and the tendency has been to magnify these latter. A point has been reached where there must be a reaction in favor of sound, rational education, if the Territory of Hawaii is to find support in the vocations it has to offer its children after such preparation. The department of public instruction has been directed to use all its wisdom and effort to bring

about sound, not theoretical, education, and it is making the effort. The children in public schools increased 1,359 and in private schools decreased 1,009. There are now in public schools 26,990 children, in private schools 6,298 children, a total of 33,288. There is a prospect of a large increase during the coming year.

A system of bungalow schoolhouses has been adopted, resulting in a saving not only in cost of plant, but also in making the housing more suitable to the climate, convenient, and healthful. If not so pretentious, this style of building offers opportunities for pleasing architectural effects.

NATIONAL PARKS AND RESERVATIONS.

The policy of setting aside tracts of land as national parks or pleasure grounds for all the people was inaugurated by Congress with the establishment, by the act of March 1, 1872, of the Yellowstone National Park in Wyoming, Montana, and Idaho. Since that time eleven additional parks in various sections of the country have been created, embracing in all over 4,436,000 acres of land. The areas of these national parks, with date of establishment of each, are as follows:

Areas of national parks.

Name.	Date of establishment.	Area.
		<i>Acres.</i>
Yellowstone, in Wyoming, Montana, and Idaho.....	Mar. 1, 1872	2,142,720
Yosemite, in California.....	Oct. 1, 1890	719,622
Sequoia, in California.....	Sept. 25, 1890	161,597
General Grant, in California.....	Oct. 1, 1890	2,536
Mount Rainier, in Washington.....	Mar. 2, 1899	207,360
Crater Lake, in Oregon.....	May 22, 1902	159,360
Wind Cave, in South Dakota.....	Jan. 9, 1903	10,522
Sullys Hill, in North Dakota.....	Apr. 27, 1904	780
Platt, in Oklahoma.....	{ July 1, 1902 Apr. 21, 1904 June 29, 1906 }	843,22
Mesa Verde, in Colorado.....	{ June 30, 1913 June 16, 1880 }	48,966.40
Hot Springs Reservation, in Arkansas.....	June 16, 1880	911.63
Glacier, in Montana.....	May 11, 1910	981,681
Total.....		4,436,904.25

Visitors.—The increasing number of visitors to these national reservations and the many requests that are received for literature in relation thereto, clearly indicate the interest of the public therein. The last national park was created May 11, 1910, and since that time bills have been introduced in Congress looking to the establishment of additional national parks in various sections of the country, none of which has as yet become a law. During the year the total number of visitors in all the parks aggregated 239,693 as against 251,703 during 1913. While the travel to these parks was not as great as in 1913 there is every reason to believe that there will be a material increase in the number of visitors during the next fiscal year when the Panama-Pacific International Exposition will be held in San Francisco.

Economic value of national parks.—Without taking into consideration the cost to visitors of transportation from their homes to the parks, a fair idea of the economic value of tourist travel in four of the larger parks may be obtained by consideration of the financial reports of concessionaires, to wit, the gross receipts in the Yellowstone for 11913 amounted to \$1,186,811.36 as compared with \$1,067,161.34 for 912; in the Yosemite, \$359,481.45 for 1913 as compared with \$311,444.32 for 1912; in the Mount Rainier, \$66,942.76 for 1913 as against \$56,735.93 for 1912; and in the Glacier National Park, \$161,510.87 for 1913.

Appropriations and revenues.—The total appropriations made by Congress for protection and improvement of these parks during the year, expendable under this department, was \$302,490, and the total revenues received from concessionaires in all the parks was \$56,949.01.

Expenditures of revenues.—The several acts of Congress setting aside lands for national park purposes, except in the cases of the Crater Lake National Park, Oreg., and the Mesa Verde National Park, Colo., authorize the expenditure of the revenues derived from the privileges or concessions therein in the management and protection of the respective reservations. In the case of the two parks above mentioned, however, the revenues therefrom are under existing law, deposited in the Treasury to the credit of miscellaneous receipts and the reservations receive no direct benefit therefrom. It is desirable that these parks, so far as the revenues therefrom are concerned, be put upon the same footing as are other national parks, and in submitting the annual estimates to Congress for the park service appropriate legislation has been recommended.

Senate bill 2223, to authorize the use of the revenues in the Crater Lake National Park in the management of the same and the construction, repair and improvement of roads, trails, and bridges therein, passed the Senate April 14, 1914, and is now pending before the House Committee on the Public Lands. This bill should be enacted into law at an early date.

Automobiles in the parks.—Automobiles have heretofore been admitted, under strict regulations governing travel of the roads, in the Mount Rainier National Park, the Crater Lake National Park, the Glacier National Park, the Wind Cave National Park, the Platt National Park, the General Grant National Park, over the Giant Forest Road in the Sequoia National Park, over the Coulterville Road from the Merced Grove of Big Trees into the Yosemite Valley in the Yosemite National Park, and over a road in the northwestern section of the Yellowstone National Park not forming a part of the generally traveled routes in that reservation, for the special accommodation of people of Gallatin County, Mont.

During the year automobiles, under appropriate regulations, were admitted over the roads in the Mesa Verde National Park, Colo., and were also permitted on the Wawona Road leading to the Mariposa Big Tree Grove and the Big Oak Flat Road in the Yosemite National Park. The generally traveled roads in the Yellowstone National Park, Mont., and the Hot Springs Reservation, Ark., are not in such a condition, considering the safety of individuals and animals, as to permit of their joint use by motor-driven vehicles and vehicles drawn by horses. Licenses have been issued during 1914, as follows:

Automobile licenses issued season of 1914.

	Automobiles.	Motor cycles.
Mount Rainier.....	1,594	188
Crater Lake.....	1,107	13
Glacier.....	267	4
Sequoia.....	158	
General Grant.....	392	12
Yosemite.....	673	
Wind Cave.....	11	
Mesa Verde.....	34	4

The policy of the department in admitting automobiles to the parks, where road conditions make motoring safe, has met with general approval. It enables the traveling public to make trips to the parks more expeditiously than formerly, and in addition to materially increasing the number of visitors to the reservation has been productive of considerable revenues, the receipts from this source in 1914 being \$14,243.07 as against \$8,435.45 during 1913.

Patented lands.—The administration of affairs in all of the national parks, with the exception of the Yellowstone, General Grant, Platt, Wind Cave, and Sully's Hill, is considerably embarrassed by the fact that within the respective boundaries are many patented lands and some toll roads. These private holdings are as follows: Yosemite National Park, 19,827 acres; Sequoia National Park, 3,716.96 acres; Crater Lake National Park, 1,337 acres and 1,121.11 acres of unperfected bona fide claims; Mesa Verde National Park, 875 acres and 118 acres unperfected bona fide claims; Mount Rainier National Park, 18.2 acres; and Glacier National Park, 8,864.40 acres of patented lands and 7,803.71 acres of unperfected bona fide claims. These lands, including the toll roads in the Sequoia and Yosemite National Parks, should be acquired by the Government. In discussing this matter in a prior annual report the Secretary of the Interior stated:

It is of special and urgent importance that provision should also be made by Congress for the extinguishment of private holdings in the several parks. These holdings seriously interfere with the proper administration of the parks and impair their

usefulness and beauty in many ways. They can be extinguished either by way of direct appropriation for their purchase or by authorizing their exchange for lands or timber within the particular parks or within the national forest reserve adjacent thereto. The public timber so exchanged can, in many cases, be confined to dead or matured timber which can be removed from the parks without injuriously affecting the scenic beauty thereof. If authority of this sort is vested in the Secretary of Agriculture and the Secretary of the Interior, as to the reserves of which they have jurisdiction, respectively, exchanges of park or forest lands or timber can be made for appropriate strips of private timbered lands along the public roads within the exterior limits of the parks or forest reserves, so as to protect the scenic beauty of these roads from impending destruction.

Thereafter Congress, by the act approved April 9, 1912 (37 Stat., 80), authorized the Secretary of the Interior, for the purpose of eliminating private holdings within the Yosemite National Park and to preserve intact the natural timber along the roads in the scenic portions of the park, both on patented and park lands, in his discretion, to obtain complete title to any and all of the lands within the boundaries of the park held in private ownership "by the exchange of decayed or matured timber, that can be removed from such parts of the park as will not affect the scenic beauty thereof, for lands of equal value held in private ownership therein, and also, in his discretion, to exchange for timber standing near the public roads on patented lands timber of equal value on park lands in other parts of the park." It was provided that the value of patented lands within the park offered in the exchange and the value of timber on park lands proposed to be given in the exchange should be ascertained in such manner as the Secretary of the Interior might direct.

The subject was taken up with the Yosemite Lumber Co., which has a large area of patented lands in the park, principally along the Wawona Road, and it was found that an exchange could not be made, for the reason that the value of the lands owned by the company with the timber thereon was far in excess of the timber on the park lands, and Congress, by the act approved April 16, 1914 (Public, No. 85), amended section 1 of the act of 1912 so as to authorize the Secretaries of Interior and Agriculture, for the purpose of eliminating private holdings in said park and preserving the timber along the roads adjoining the scenic portions thereof on patented lands, to obtain and accept for the United States a complete title to any and all patented lands within the boundaries of the park "by the exchange of timber or timber and lands within the Yosemite National Park and the Sierra and Stanislaus National Forests for such lands and the timber thereon within the park."

The matter of an exchange in which the Government is to give park lands and timber and lands in the Sierra National Forest for lands and timber in the park owned by the Yosemite Lumber Co., exchange values in each case to be equal, is now under consideration.

The act of Congress approved May 13, 1914 (Public, No. 99), for the purpose of preserving scenic features and consolidating certain forest lands belonging to the United States within the Sierra National Forest and the Yosemite National Park, Cal., authorizes the Secretary of the Interior, on the recommendation of the Secretary of Agriculture, "and after obtaining and accepting for the Government of the United States a valid title to the land to be acquired, which title shall be approved by the Secretary of the Interior, to exchange lands belonging to the United States within the Sierra National Forest for privately owned timberlands of approximately equal area lying within the boundaries of said national forest and the Yosemite National Park."

The act also provides that upon the completion of the transaction the lands acquired by the Government within the Sierra National Forest shall become a part of the park. Under this exchange, if consummated, there will be about 160 acres added to the park.

Senate bill 5433, which passed the Senate on June 5, 1914, and is now pending before the House Committee on Public Lands, authorizes the Secretary, for the purpose of eliminating private holdings within the Glacier National Park and to preserve the natural timber along the roads in the scenic portions of the park on patented and park lands, to obtain for the United States a complete title to any or all lands held in private or State ownership within the park "by the exchange of dead, decadent, or matured timber that can be removed from any part of the park without affecting the scenic beauty thereof, or from Government lands within the metes and bounds of the national forests within the State of Montana," and also to exchange for patented lands in the park Government lands of equal value within national forests in said State, the lands in the national forests to be offered in exchange to be determined by the Secretary of Agriculture.

Jurisdiction.—In the Yellowstone National Park and the Platt National Park the United States has exclusive jurisdiction thereover and Congress has provided a means of enforcement of the laws and regulations pertaining thereto. The legislature of the State of Montana, by the act of February 17, 1911, ceded exclusive jurisdiction to the United States of the territory within the metes and bounds of the Glacier National Park, and by act approved August 22, 1914, Congress accepted the cession by the State of Montana of exclusive jurisdiction over the lands embraced within the Glacier National Park, and the United States District Court for the District of Montana has, as required by section 6 of said act, appointed a commissioner to reside in the park, who has jurisdiction to hear and act upon all complaints made of any violations of law or of the rules and regulations made by the Secretary of the Interior for the government of the park and for the protection of the animals, birds, and

fish, and objects of interest therein, and for other purposes authorized by said act. In the other national parks, however, over which the laws of the States in which they are located obtain, great difficulties in administration have been encountered, owing to the fact that the department has no jurisdiction to punish offenses in violation of the regulations relating thereto, and particularly in the matter of preventing depredations on game and the selling of liquor therein.

Removal of troops from the parks.—Under the act of June 6, 1900 (31 Stat., 618), the Secretary of War has, on request of this department, detailed troops, during the summer months, to the Yosemite, Sequoia, and General Grant National Parks for protective purposes therein. The expense to the War Department in maintaining these details was considerable, and the expenditures from the park revenues resulting from their presence in the park were large; furthermore, the conditions in and around these reservations which led to the authorization of the use of the military force in these parks having radically changed, the conclusion was reached that their presence was no longer required in the Yosemite, Sequoia, and General Grant National Parks, and the Secretary of War was so advised. During the past year, therefore, troops have no longer been employed in these reservations and have been superseded by civilian rangers, bringing the latter in closer touch with the actual work of the park management than was formerly practicable when troops were only in the reservations for a few months.

General Superintendent of National Parks.—On March 10, 1914, Mr. Mark Daniels, of California, was commissioned as landscape engineer in the Yosemite National Park for the purpose of preparing a comprehensive general plan for the development and improvement of the floor of the Yosemite Valley covering the best locations for roads, trails, and bridges, so as to bring into view the full scenic beauty of the surroundings, the clearing and trimming of suitable areas of woods to provide attractive vistas, the proper location and arrangement of a village in the Yosemite Valley, etc. Subsequently, with a view to increasing the efficiency in the administration of the parks and the reduction in the cost of superintendence, Mr. Daniels was commissioned, on June 4, 1914, general superintendent and landscape engineer for all the national parks under this department, and the titles of the officers in charge of the immediate work in the reservations changed from superintendents to supervisors at lower salaries than were paid the superintendents. Since the date of his appointment Mr. Daniels has inspected the Yosemite, Sequoia, and General Grant National Parks in California, Mount Rainier National Park, Wash., Glacier National Park, Mont., Crater Lake National Park, Oreg., and the Yellowstone National Park, Wyo., and submitted recommendations in relation thereto, and before the close of

the year he will inspect the Mesa Verde National Park, Colo., Platt National Park, Okla., Hot Springs Reservation, Ark., the Wind Cave National Park, S. Dak., and Sullys Hill National Park, N. Dak.

Roads.—Under a cooperative agreement with the Good Roads Office of the Agricultural Department, and with a view to bringing about the wisest possible expenditure of available funds for road building and maintenance thereof in the parks, the services of experienced highway engineers have been secured to make comprehensive surveys for a system of roads and trails in the reservations, the salaries of such engineers to be paid by the Agricultural Department and their expenses by the Interior Department. This work is satisfactorily progressing and preliminary surveys have been made in the Glacier, Yosemite, Sequoia, and General Grant National Parks. Through cooperation by the employees of the Forest Service in the field with the employees in the various parks, more effective control of forest fires has been secured and much valuable timber has been preserved.

Sanitary inspections.—The reports of the sanitary inspections heretofore made by the chemist of the United States Geological Survey of camp, hotel, sewerage and other conditions of the Glacier, Yellowstone, and Yosemite National Parks were brought to the attention of the superintendents of these reservations as well as the concessionnaires therein, and active work has been inaugurated looking to the protection, from pollution, of the water for drinking purposes, the proper disposition of sewage, and the enforcement of hygienic regulations necessary to the protection of the health of the visitors in the parks. Similar inspections will be made where necessary in other national parks as funds available for the work will permit.

Hotels.—In the Yellowstone National Park the hotel at Mammoth Hot Springs has been reconstructed, additions have been made to the Old Faithful Hotel, the pavilions for housing and caring for people at the permanent camps materially improved, and a 20 per cent reduction in the transportation rates from the western entrance of the park has been secured without any deterioration of the character of service rendered. In the Yosemite National Park a contract is under consideration under which new hotel and camps will be provided for the accommodation of tourists in the Yosemite Valley and in the other parks material improvements have been made in the permanent camps and other services.

Hetch Hetchy Valley, Yosemite National Park.—In prior annual reports the permit issued to the city and county of San Francisco in 1908 granting the right of way over certain lands in the Yosemite National Park, with permission to take water from Lake Eleanor and Hetch Hetchy Valley in that park under conditions therein set forth,

was very fully discussed, and reference was made to a bill then pending in Congress granting the city and county of San Francisco such right of way in said park. On December 19, 1913, House bill 7207 became a law, granting to the city and county of San Francisco certain rights of way in, over, and through certain public lands, the Yosemite National Park, and Stanislaus National Forest, and certain lands in the Yosemite National Park, the Stanislaus National Forest, and the public lands in the State of California, and for other purposes. The maps required under this act showing the right of way have been filed and approved and the city has taken steps to effectuate the provisions of this statute.

Proposed national park service.—In the annual report of the Secretary of the Interior for 1911, in discussing national-park affairs, he stated:

While public interest in, and use of, these reservations is steadily increasing, as shown by the growing number of visitors, adequate provision has not been made for their efficient administration, and sufficient appropriations have not been made for their proper care and development. At present each of these parks is a separate and distinct unit for administrative purposes. The only general supervision which is possible is that obtained by referring matters relating to the national parks to the same officials in the office of the Secretary of the Interior. Separate appropriations are made for each park, and the employment of a common supervising and directing force is impossible. Many of the problems in park management are the same throughout all of the national parks, and a great gain would be obtained and substantial economies could be effected if the national parks and reservations were grouped together under a single administrative bureau. Bills to create a bureau of national parks have heretofore been introduced in Congress, and, in my judgment, they should immediately receive careful consideration so that proper legislation for this purpose may be enacted. Adequate appropriation should also be made for the development of these pleasure grounds of the people, especially through the construction of roads and trails and their proper care and maintenance.

In a special message to Congress, dated February 3, 1911, President Taft stated:

I earnestly recommend the establishment of a bureau of national parks. Such legislation is essential to the proper management of those wondrous manifestations of nature, so startling and so beautiful that everyone recognizes the obligations of the Government to preserve them for the edification and recreation of the people.

A bill (S. 826, 63d Cong., 1st sess.) to establish the national-park service, and for other purposes, is now pending in Congress and has been reported favorably by the Senate Committee on Public Lands, and its early enactment into law is earnestly recommended.

There are hereto appended tables giving the location, date of establishment, area, private holdings, if any, and number of visitors, and the special characteristics of the various national parks under the supervision of the Secretary of the Interior, the appropriations made by Congress for the protection and improvement thereof during 1914 and eight years prior thereto, as well as revenues derived from leases, privileges, and concessions in said reservation received during said period; also a statement of the automobile receipts during 1914.

NATIONAL MONUMENTS AND PRESERVATION OF AMERICAN ANTIQUITIES.

By an act approved June 8, 1906, entitled "An act for the preservation of American antiquities," the President of the United States is authorized, "in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments." Under such authority the President has created the twenty-nine monuments:

National monuments administered by Interior Department.

Name.	State.	Date.	Area.
			<i>Acres.</i>
Devils Tower.....	Wyoming.....	Sept. 24, 1906	1,152
Montezuma Castle.....	Arizona.....	Dec. 8, 1906	160
El Morro.....	New Mexico.....	do.....	160
Chaco Canyon.....	do.....	Mar. 11, 1907	1 20,629
Muir Woods ²	California.....	Jan. 9, 1908	295
Pinnacles.....	do.....	Jan. 16, 1908	2,080
Tumacacori.....	Arizona.....	Sept. 15, 1908	10
Mukuntuweap.....	Utah.....	July 31, 1909	1 15,840
Shoshone Cavern.....	Wyoming.....	Sept. 21, 1909	210
Natural Bridges ³	Utah.....	Sept. 25, 1909	1 2,740
Gran Quivira.....	New Mexico.....	Nov. 1, 1909	160
Sitka.....	Alaska.....	Mar. 23, 1910	57
Rainbow Bridge ⁴	Utah.....	May 30, 1910	160
Lewis and Clark Cavern.....	Montana.....	May 16, 1911	160
Colorado.....	Colorado.....	May 24, 1911	13,883
Petrified Forest.....	Arizona.....	July 31, 1911	25,625
Navajo ⁴	do.....	Mar. 14, 1912	360
Papago Saguaro.....	do.....	Jan. 31, 1914	2,050

¹ Estimated area.

² Donated to the United States.

³ Originally set aside by proclamation of Apr. 16, 1908, and contained only 120 acres.

⁴ Within an Indian reservation.

One new monument, the Papago Saguaro, was created during the fiscal year. It embraces approximately 2,050 acres of rocky and desert land in Maricopa County, Ariz. Within the tract is found a splendid collection of characteristic desert flora, including many striking examples of giant cactus and other interesting species of cacti as well as fine examples of the yucca palm. Within the tract historic pictographs may be found upon the faces of the rocks, adding to the interest of the reservation ethnologically and archeologically.

Administrative conditions.—The supervision of these various monuments has, in the absence of any specific appropriation for their protection and improvement, necessarily been intrusted to the field officers of the department having charge of the territory in which the several monuments are located.

As stated in the last annual report, the administrative conditions continue to be unsatisfactory, since no appropriation of funds has yet been made available for this important, protective, and preservative work. Such supervision as has been possible in the cases of a few monuments only has been wholly inadequate and has not prevented

vandalism, unauthorized exploitation or spoliation of relics found in those prehistoric ruins, whose preservation is contemplated by the passage of the act of June 8, 1906. An estimate in the sum of \$5,000 for protection of these monuments was submitted last year, but no appropriation was made, and a similar estimate will again be submitted to Congress, not so much for the purpose of preserving by restoration the objects reserved in the national monuments as to prevent the removal of valuable relics and vandalism. Monuments suffering from these causes should be provided with a custodian or superintendent, and in this way a small general appropriation can be made most useful and its expenditure will be wholly in the interest of the public. The protection and preservation of the national monuments as public reservations are of great interest and importance because a great variety of objects, historic, prehistoric, and scientific in character, are thus preserved for public use intact, instead of being exploited by private individuals for gain and their treasures scattered. These reserves should be administered in connection with the national parks, which they strongly resemble. It would be difficult to define one in terms that would exclude the other. The renewal of the estimate for a small appropriation has been made for the purpose of keeping this class of reserves intact until such time as Congress shall authorize the creation of some administrative unit which shall take over both the parks and monuments and administer them under a general appropriation.

National monuments under other departments.—The following national monuments are not administered by the Secretary of the Interior:

National monuments administered by Department of Agriculture.

Name.	State.	Date.	Area.
			<i>Acres.</i>
Cinder Cone.....	California.....	May 6, 1907	15,120
Lassen Peak.....	do.....	do.....	11,280
Gila Cliff Dwellings.....	New Mexico.....	Nov. 16, 1907	160
Tonto.....	Arizona.....	Dec. 19, 1907	1,640
Grand Canyon.....	do.....	Jan. 11, 1908	1806,400
Jewel Cave.....	South Dakota.....	Feb. 7, 1908	11,280
Wheeler.....	Colorado.....	Dec. 7, 1908	1300
Oregon Caves.....	Oregon.....	July 12, 1909	480
Devil Postpile.....	California.....	July 6, 1911	1800
Mount Olympus.....	Washington.....	Apr. 17, 1912	1608,480

¹ Estimated area.

National monuments administered by War Department.

Name.	State.	Date.	Area.
			<i>Acres.</i>
Big Hole battle field ¹	Montana.....	June 23, 1910	5
Cabrillo.....	California.....	Oct. 14, 1913	1

¹ Set aside by Executive order.

Excavation of ruins.—Paragraph 3 of the uniform rules and regulations promulgated by the Secretaries of the Interior, Agriculture, and War, under date of December 28, 1906, to carry out the provisions of the act for the preservation of American antiquities, reads as follows:

Permits for the excavation of ruins, the excavation of archæological sites, and the gathering of objects of antiquity will be granted by the respective Secretaries having jurisdiction to reputable museums, universities, colleges, or other recognized scientific or educational institutions, or to their duly authorized agents.

During the year five permits were granted for the examination, excavation, and gathering of specimens, as follows:

To Prof. Byron Cummings, of the University of Utah, to make examinations and excavations as continuation of explorations under similar permits granted him by the department on June 26, 1912, and July 11, 1913, within the Navajo National Monument, in the Navajo and Piute Indian Reservations, and in San Juan County, Utah, as well as on lands 30 miles northwest of Bluff, Utah.

To Prof. F. W. Putnam, honorary director of the Peabody Museum, Harvard University, to make examination and excavation of ruins in the Chinlee Valley, and the tributary canyons heading against the Navajo Mountains on its east and north sides, on behalf of the Peabody Museum, as continuation of explorations under a similar permit granted by the department on June 18, 1913. This locality is in the vicinity of the Navajo National Monument, and approaches but does not overlap the region of Prof. Cummings' explorations.

To Prof. Lull, representing the department of geology of Yale University, to enter upon the Rosebud Indian Reservation and the Pine Ridge Reservation, in South Dakota, and the Fort Niobrara Abandoned Military Reservation, in Nebraska, for the purpose of collecting vertebrate fossils, specimens of which are to be used in the museums of Yale University.

To Prof. Livingston Farrand, president of the University of Colorado, to carry on archæological research in Montezuma and La Plata Counties, Colo., and in San Juan County, N. Mex., including such parts of the Ute and Navajo Indian Reservations as lie within those counties, and to take specimens for the benefit of the University of Colorado.

To Dr. E. Bonnert, of Dornach-Mulhausen, Germany, for removal of not exceeding 500 pounds of silicified wood from the Petrified Forest National Monument in Arizona, for presentation to the Geological Institute of Elsass-Lothringen, in Germany.

BIRD RESERVES.

All of the bird reserves have been created through reference from the Interior Department to the President of forms of Executive orders providing therefor. These reserves are regarded as in all

essential particulars reservations of public lands for public use or other purposes, for which there are numerous precedents. The first specific act of Congress providing for the protection of birds by bird reserves created by Executive order was introduced by Hon. John F. Lacy, of Iowa, and became a law on June 28, 1906 (34 Stat., 536). This act made it unlawful to kill birds, to take their eggs, or to willfully disturb birds upon the reservations, and it provides a fine of not exceeding \$500 or imprisonment for not exceeding six months, or both fine and imprisonment, for each conviction secured. This law was substantially reenacted in the new Penal Code approved March 4, 1909 (35 Stat., 1104), in the following language:

SEC. 84. Whoever shall hunt, capture, willfully disturb, or kill any bird of any kind whatever, or take the eggs of any such bird, on any lands of the United States which have been set apart or reserved as breeding grounds for birds by any law, proclamation, or Executive order, except under such rules and regulations as the Secretary of Agriculture may from time to time prescribe, shall be fined not more than five hundred dollars or imprisoned not more than six months, or both.

During the year two new reservations for the protection of native birds were created as follows:

Smith Island, Wash., created June 6, 1914.

Blackbeard Island, Ga., created July 17, 1914.

The reservations now existing are 67 in number, of which 65 are being administered under the direction of the Biological Survey, Department of Agriculture. The Pribilof reservation in Alaska is administered by the Bureau of Fisheries of the Department of Commerce, and the Canal Zone reservation, Panama, by the Isthmian Canal Commission.

Bird reserves created.

Name of reservation.	Date.	Location.	Area.
Pelican Island.....	Mar. 14, 1903	East Florida coast.....	5.50 acres.
Breton Island.....	{ Oct. 4, 1904 Nov. 11, 1905	{ Southeast coast of Louisiana.....	Unknown.
Stump Lake.....	Mar. 9, 1905	North Dakota.....	27.39 acres.
Huron Islands.....	Oct. 10, 1905	Lake Superior, Mich.....	Unknown.
Siskiwiut Islands.....	do.	do.....	Do.
Passage Key.....	do.	Tampa Bay, Fla.....	36.37 acres.
Indian Key.....	Feb. 10, 1906	do.....	90 acres.
Tern Islands.....	Aug. 8, 1907	Mouths of Mississippi River, La.....	Unknown.
Shell Keys.....	Aug. 17, 1907	South Louisiana coast.....	Do.
Three Arch Rocks.....	Oct. 14, 1907	West Oregon coast.....	Do.
Flattery Rocks.....	Oct. 23, 1907	West Washington coast.....	Do.
Quillayute Needles.....	do.	do.....	Do.
Copalis Rock.....	do.	do.....	Do.
East Timbalier Island.....	Dec. 7, 1907	South Louisiana coast.....	Do.
Mosquito Inlet.....	Feb. 24, 1908	East Florida coast.....	Do.
Tortugas Keys.....	Apr. 6, 1908	Florida Keys, Fla.....	Do.
Klamath Lake.....	Aug. 8, 1908	Oregon and California.....	Do.
Key West.....	do.	Florida Keys, Fla.....	Do.
Lake Malheur.....	Aug. 18, 1908	Oregon.....	Do.
Chase Lake.....	Aug. 28, 1908	North Dakota.....	Do.
Pine Island.....	Sept. 15, 1908	West Florida coast.....	Do.
Matlacha Pass.....	Sept. 26, 1908	do.....	Do.
Palma Sola.....	do.	do.....	Do.
Island Bay.....	Oct. 23, 1908	Florida.....	Do.
Loch Katrine.....	Oct. 26, 1908	Wyoming.....	Do.
Hawaiian Islands.....	Feb. 3, 1909	Hawaii.....	Do.
East Park.....	Feb. 25, 1909	California.....	Do.
Cold Springs.....	do.	Oregon.....	Do.

Bird reserves created—Continued.

Name of reservation.	Date.	Location.	Area.
Shoshone.....	Feb. 25, 1909	Wyoming.....	Unknown.
Pathfinder.....	do.	do.	Do.
Bellevue.....	do.	South Dakota.....	Do.
Strawberry Valley.....	do.	Utah.....	Do.
Salt River.....	do.	Arizona.....	Do.
Deer Flat.....	do.	Idaho.....	Do.
Minidoka.....	do.	do.	Do.
Willow Creek.....	do.	Montana.....	Do.
Carlsbad.....	do.	New Mexico.....	Do.
Rio Grande.....	do.	do.	Do.
Keechelus Lake.....	do.	Washington.....	Do.
Kachess Lake.....	Feb. 25, 1909	Washington.....	Do.
Clegham Lake.....	do.	do.	Do.
Bumpus Lake.....	do.	do.	Do.
Conconully.....	do.	do.	Do.
Bering Sea.....	Feb. 27, 1909	Alaska.....	Do.
Pribilof.....	do.	do.	Do.
Tuxedni.....	do.	do.	Do.
Farallon.....	do.	California.....	Do.
Culebra.....	do.	Porto Rico.....	Do.
Yukon Delta.....	do.	Alaska.....	Do.
St. Lazaria.....	do.	do.	Do.
Bogoslof.....	Mar. 2, 1909	do.	Do.
Clear Lake.....	Apr. 11, 1911	California.....	Do.
Forrester Island.....	Jan. 11, 1912	Alaska.....	Do.
Hazy Islands.....	do.	do.	Do.
Niobrara.....	do.	Nebraska ¹	14,640 acres.
Green Bay.....	Feb. 21, 1912	Wisconsin.....	1.87 acres.
Chamisso Island.....	Dec. 7, 1912	Alaska.....	Unknown.
Pishkun.....	Dec. 17, 1912	Montana.....	Do.
Desecheo Island.....	Dec. 19, 1912	Porto Rico.....	Do.
Gravel Island.....	Jan. 9, 1913	Wisconsin.....	Do.
Aleutian Islands.....	Mar. 3, 1913	Alaska.....	Do.
Canal Zone ²	Mar. 19, 1913	Panama.....	Do.
Walker Lake.....	Apr. 21, 1913	Arkansas.....	Do.
Petit Bois Island.....	May 6, 1913	Alabama and Mississippi.....	Do.
Anaho Island.....	Sept. 4, 1913	Nevada.....	247.73 acres.
Smith Island.....	June 6, 1914	Washington.....	Unknown.
Blackbeard Island.....	July 17, 1914	Georgia.....	Do.

¹ Transferred to Bureau of Fisheries.² Approximate area.³ Under jurisdiction of Isthmian Canal Commission, Canal Zone. Strictly speaking, not a bird reservation, but birds are protected by Executive order.Total reservations, including Canal Zone³, 67.*Bird reserves enlarged and reduced.*

Name of reservation.	Date.	Location.	Area.
Pelican Island.....	Jan. 26, 1909	Florida (enlarged).....	Unknown.
Mosquito Inlet.....	Apr. 2, 1909	do.	Do.
Cold Springs.....	Nov. 25, 1911	Oregon (enlarged).....	Do.
Clear Lake.....	Jan. 13, 1912	California (reduced).....	Do.
Minidoka.....	Feb. 21, 1912	Idaho (enlarged).....	Do.
Niobrara.....	Nov. 14, 1912	Nebraska (enlarged) ¹	15,253.7 acres.

¹ Approximate area.

As appears from this list these reservations are scattered between Alaska and Porto Rico. After careful consideration, based upon representations made by this department, the Isthmian Canal Commission secured an Executive order for the protection of the native birds within the zone, which, in its punitive features, conforms to section 84 of the United States Penal Code. Jurisdiction over the Canal Zone reservation is, however, retained by the Isthmian Canal Commission instead of being placed with the Department of Agriculture, as is the case in all other Government bird reserves.

ELEEMOSYNARY INSTITUTIONS.

GOVERNMENT HOSPITAL FOR THE INSANE.

Movements of population.—On June 30, 1914, there were remaining in the hospital 3,062 patients, as against 2,988 remaining on June 30, 1913, an increase of 74 patients. There were admitted during the year 752 patients, an increase over the previous year of 6, this being the largest number of admissions in the history of the institution, with one exception, to wit, the year 1903-4, when the number was 766. The total number of patients treated during the year was 3,740, an increase of 96 over last year. The number of discharges, including deaths, was 678, a decrease of 22, despite the increase in population. The daily average number of inmates was 3,025, as against 2,950.66 of the previous year, an increase of 74.34.

Patients during fiscal year ended June 30, 1914.

	Male.		Female.		Total.
	White.	Colored.	White.	Colored.	
Remaining June 30, 1913.....	1,826	375	498	289	2,988
Admitted during the year.....	463	109	107	73	752
Total number under treatment.....	2,289	484	605	362	3,740
Discharged:					
Recovered.....	80	13	22	21	136
Improved.....	38	4	10	8	60
Unimproved.....	77	22	23	11	133
Not insane.....	18	4	3	2	27
Died.....	201	49	40	32	322
Total.....	414	92	98	74	678
Remaining June 30, 1914.....	1,875	392	507	288	3,062

Daily average, male, 2,231; female, 794; total, 3,025.

Improvements.—The principal improvements made during the year were the completion of the five tuberculosis cottages provided for in the sundry civil act of August 24, 1912. These cottages are now occupied. They are one story in height, about 142½ feet long and 16 feet wide, and are constructed to hold 20 patients. Two have been assigned to white male patients, one to white females, and one each to colored males and females. The total cost of the buildings and furnishings aggregates \$19,994.66. A contract has been let for building a concrete wall around the criminal building known as Howard Hall. This contract calls for an expenditure of \$27,663, and allows a balance for supervision, grading, etc., of a little less than \$3,000 from the appropriation as made by Congress. The largest work of remodeling is the centralization of the power, heating, and lighting plant, etc., and this work is progressing at a very favorable rate. The work of changing the electrical layout of the hospital from

direct to alternating current, which has been in progress for some time, was completed in April, and only alternating current is now used throughout the institution. All the old wiring necessary to be changed in connection with the remodeling work has been completed, and preparations are being made to start work on the final changes in the machinery at the power plant in order that it may be used in connection with the alternating-current generator. Other improvements include the reconstruction of the palm house, the completion of the piggery building, the remodeling of plumbing, the providing of additional fire protective apparatus by installing two 1,000-gallon per minute Underwriter fire pumps in the power house and the rearrangement and extension of the water system so as to make a complete high-pressure fire system to operate direct from the fire pumps. The contract for the construction of cow barns was let, and the work is now under way. Many minor repairs in addition to the above were also made.

Needs of the hospital.—The hospital has been increasing in size lately, and the 1,000 beds for which the hospital extension was constructed, as provided for by Congress some years ago, are all filled. In certain portions of the hospital there is evidence of crowding, notably so in the portion assigned to females, and a new building for their accommodation will be needed in the near future. A new gatehouse and gates are needed, and better quarters should be provided for the medical staff and their families. A shop and storehouse building is necessary in which to locate the shops and care for material at present in the basement of the criminal building, so as to complete the plan of security for the class of criminal insane now housed in Howard Hall.

In 1912 a committee of six, consisting of Surg. Gen. George H. Torney, United States Army, representing the Secretary of War; Surg. A. W. Dunbar, representing the Secretary of the Navy; Mr. Robert V. La Dow, superintendent of prisons, representing the Attorney General; Maj. William V. Judson, Corps of Engineers, United States Army, representing the Commissioners of the District of Columbia; Mr. Scott C. Bone, representing the Board of Visitors of the Government Hospital for the Insane; and Dr. William A. White, superintendent of the Government Hospital for the Insane, representing the department, were, after consultation with the President, designated by the Secretary of the Interior to make a thorough investigation of the needs of the hospital and the future policy for its growth and development; their report on the subject was subsequently transmitted by the President to Congress for consideration. (S. Doc. No. 256, 62d Cong., 2d sess.) This report discusses very fully the needs of the hospital under four heads: (a) Defects in the laws governing the conduct of the institution and the commitment of patients. Under this head is included a draft of proposed legisla-

tion for commitment from the District of Columbia, along with certain changes in the legislation with reference to the transfer of Federal prisoners to the hospital. (b) The advisability of continuing in the hospital patients committed from the District of Columbia and from the Army and Navy and from distant points. Under this head is discussed the whole question of the future policy of the hospital with reference to the commitment of patients from distant points. (c) The policy to be adopted relating to the growth of the institution, and the matter of additional lands, buildings, equipment, etc. Here the questions of administration, size of the institution, and its physical needs are discussed, together with a special report as to the care of the criminal insane. (d) The present conduct of the institution, including recommendations for improvement of the service and the advancement of the interests of the inmates. Under the third section the needs of the hospital are set forth. The recommendations contained in this report are commended to the further consideration of Congress.

FREEDMEN'S HOSPITAL.

Movements of population.—There were admitted to the hospital during the year 3,144, including 301 births. These, with 191 remaining from the preceding year make a total of 3,335 indoor patients receiving the benefits of the hospital. Of those received during the year 1,669 were chargeable to the District of Columbia, 1,247 to the General Government, and 228 paid for their care and treatment.

There were discharged during the year 3,148 patients, of whom 1,502 had recovered, 1,141 improved, 223 unimproved, 6 not treated, and 276 died, leaving 187 in the hospital at the close of the year, 85 of whom were District of Columbia patients, 96 United States patients and 6 pay patients. The percentage of death from all causes was 8.2 per cent. Eliminating the premature births and moribund cases, the percentage of deaths would be 4.5 per cent of the cases under care. The surgical work involved 1,793 operations, as against 1,667 the previous year.

Pay patients.—In the act "making appropriations to provide for the expenses of the District of Columbia for the fiscal year ending June 30, 1913, and for other purposes," approved June 26, 1912, provision is made, under the head of "Medical charities," as follows:

Hereafter patients may be admitted to Freedmen's Hospital for care and treatment on the payment of such reasonable charges therefor as the Secretary of the Interior may prescribe. All money so collected shall be paid into the Treasury to the credit of Freedmen's Hospital, to be disbursed under the supervision of the Secretary of the Interior for subsistence, fuel, and light, clothing, bedding, forage, medicine, medical and surgical supplies, surgical instruments, repairs, furniture, and other absolutely necessary expenses incident to the management of the hospital, a report as to the expenditure thereof to be made annually to Congress.

Under this provision the hospital has received a class of patients who had for many years sought the benefits of its care and treatment, 228 being received for treatment, including 21 births, during the second year of its operation. The receipts for the care and treatment of this class of patients amounted to \$5,307.85.

There were treated in the outdoor service 1,628 medical cases, 341 minor surgical, 693 gynecological, 174 nervous, 1,057 eye, 1,057 ear, nose, and throat, 541 genito-urinary, 296 pediatrics, 395 dermatology, 180 orthopedic, and 53 tuberculosis.

The large and increasing number of operations in the hospital render an additional anesthetist necessary, as under present conditions inexperienced internes are often forced to assist in this important duty.

Provision for a general-stores keeper is urgent, and an additional assistant engineer is necessary to a strict compliance with the eight-hour law. The need for a fence around the hospital grounds grows, as the neighboring population increases yearly. The open-air treatment, with strict privacy, would then be possible.

The sundry civil act approved August 1, 1914, provides the following:

To reimburse the United States the amount due on account of one-half of the per capita cost of maintenance of indigent patients in Freedmen's Hospital from the District of Columbia in excess of the number charged to and paid for by said District during the fiscal years nineteen hundred and six to nineteen hundred and thirteen, inclusive, there shall be transferred from the revenues of the District of Columbia to the United States, beginning with the fiscal year nineteen hundred and fifteen, the sum of \$37,996.70, which amounts so transferred shall be covered into the Treasury as miscellaneous receipts.

As this money was earned by the hospital, the surgeon in chief expresses the opinion that it could be put to no better use than for the construction of the much-needed laboratory building, which would also furnish increased space for the laundry.

Receipts and disbursements.—The receipts and disbursements of the hospital may be stated as follows:

RECEIPTS.

Appropriation, sundry civil act:

For support.....	\$26,000.00	
Salaries.....	32,040.00	
Ash conveyer.....	3,000.00	
		\$61,040.00

Appropriation, District of Columbia (under contract with

Board of Charities).....	33,860.75	
Pay patients.....	5,307.85	
		39,168.60

Total.....			100,208.60
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DISBURSEMENTS.

Miscellaneous (fuel, light, clothing, forage, medicine, etc.)....	\$32, 312.02	
Miscellaneous, ash conveyer.....	3, 000.00	
Miscellaneous, pay patients.....	3, 322.96	
Subsistence.....	26, 820.59	
Subsistence, pay patients.....	95.38	
Salaries.....	31, 959.31	
Salaries, pay patients.....	1, 579.17	
Refund of overpayments, pay patients.....	214.35	
		\$99, 303.78
		904.82

HOWARD UNIVERSITY.

The university was incorporated by the act of March 2, 1867 (14 Stats., 438). The object of the incorporation named in the first section of the act was "for the education of youth in the liberal arts and sciences." It is declared that the incorporators shall be "a body politic and corporate, with perpetual succession," etc. The management and control of the institution were vested in a board of not less than 13 trustees.

Students.—There were in attendance during the year 1,463 students from 37 States and 7 foreign countries. This number does not include 57 students who took work in the school of theology by correspondence. The number of students of the different departments was as follows:

College of arts and sciences.....	314
Teachers' college.....	193
School of manual arts and applied sciences.....	228
Conservatory of music.....	109
School of theology.....	110
School of medicine.....	283
School of law.....	109
Academy.....	450
Commercial college.....	90
	1, 886
Names duplicated because of students taking course in different departments..	423
Correct total.....	1, 463

This number is an increase over that of 1912-13 of 10. The increase has been greater than that in some departments because, owing to stricter requirements, there has been a falling off in some other departments. The university, however, is likely to grow very largely in all departments during the next few years. Two hundred and twenty-one students completed their studies in the university, as follows:

College of arts and sciences.....	49
Teachers' college.....	22
Normal course.....	4
Kindergarten.....	4
Domestic science.....	2

School of manual arts and applied sciences.....	1
School of theology.....	19
School of medicine.....	32
School of dentistry.....	23
School of pharmacy.....	9
School of law.....	25
Academy.....	25
Commercial college.....	6
Total.....	221

School of theology.—No part of any appropriation by Congress has ever been applied to support this department. It has received many small donations and two or three larger ones, and an effort is being made at the present time to secure funds by which it can be put upon a well-assured basis and be enlarged to meet the needs of the colored ministry with a broader training. It is under no outside control or direction. The school is interdenominational and welcomes all who are preparing for the best service in moral and religious work. Some of the graduates of it are doing very great good in large city churches, and others are exercising wide influence in country regions where they guide the common people into better ways of living.

The correspondence work of this school is growing in importance and numbers. Many busy pastors are getting great good from the instruction they receive in this way.

The work of this school is being strengthened and widened from year to year.

The roll of students for the year was as follows:

Seniors.....	11
Middlers.....	17
Juniors.....	21
Special students.....	8
	57
Evening institute:	
Fourth year.....	9
Third year.....	7
Second year.....	7
First year.....	14
	37
Correspondence students matriculated as university students.....	16
Total.....	110
Correspondence students not matriculated as university students.....	57

Of these, 6 received degrees, 6 received diplomas, and 7 received testimonials.

Thirty-two were graduated from the school in medicine, 23 in dentistry, and 9 in pharmacy, and in the school of law 25 students received degrees, while 49 were graduated from the college of arts

and sciences. Thirty-two received degrees and diplomas in the teachers' college.

Appropriations.—Although the institution was established in 1867, no appropriation was made by Congress for its support until March 3, 1879, when \$10,000 was appropriated "for maintenance." From that date up to August 1, 1914, the date of the approval of the last sundry civil act, Congress has appropriated for the university a total of \$1,680,340.

Property.—The treasurer of the institution in a report dated October 3, 1914, says the total value of all property belonging to the university on that date was \$1,119,422.27, of which \$410,358.08 represents endowments, unproductive land fund and cash in bank, etc. The remainder of the property belonging to the university, valued at \$1,300,325.85, consists of land, \$615,691.50; buildings, \$548,867.21; and equipment, \$135,767.14

The total amount appropriated by Congress, plus the endowments, unproductive-land fund, and surplus current assets (unpaid tuitions). is \$2,090,698.08, and while the annual congressional appropriations have been mainly for the payment of salaries, the purchase of supplies, erection and repairs to buildings, care of grounds, and other current expenses, the property of the university is at this date worth within \$371,275.81 of the sum of all appropriations, endowments, and unproductive-land fund and surplus current assets.

The Government is not represented on the board of trustees of the university and has no title to buildings erected or improvements made to buildings from congressional appropriations.

In annual reports for the last three preceding years the Secretary of the Interior, in discussing this subject, has said:

Considering the magnitude of the appropriations made by Congress for the maintenance, improvement, etc., of the university and the statement of the president thereof, it is manifest that the Government should have greater supervision over the institution, and it is therefore recommended that the act of incorporation of March 2, 1867, be so amended as to give the Government a proper representation on the board of trustees, that appropriations made by Congress shall be expended under the direction of the Secretary of the Interior, and that the institution be required to protect the United States against possible transfer or loss of the lands upon which buildings have heretofore or may hereafter be erected from funds provided by the Government.

COLUMBIA INSTITUTION FOR THE DEAF.

The number of deaf pupils and students remaining in the institution July 1, 1913, was 196; admitted during the year, 57; total, 153; admitted for the school year 1914-15, 36. From July 1, 1913, to July 1, 1914, there were under instruction 86 males and 67 females; a total of 153, of whom 108 have been in the collegiate department, representing 32 States, the District of Columbia, and Canada; and 45 in the primary department. Of these 35 were admitted as bene-

ficiaries of the District of Columbia. During the fiscal year 36 were discharged from the institution by graduation and otherwise.

No serious illness or contagion occurred during the fiscal year, and generally speaking excellent health has prevailed during that period among the students.

The total receipts for the year, including cash on hand July 1, 1913, were \$96,807.72; the total expenses were \$95,676.98; leaving a cash balance on hand on June 30, 1914, of \$1,130.84.

The alumni meeting was held June 22 to June 25, and about 250 former students and graduates were present, all of whom have been successful in various occupations.

At the close of the year the degree of master of arts was conferred on 6 students, bachelor of arts on 7, and bachelor of letters on 1.

The department has no supervision over the expenditures of the appropriation made by Congress or general supervision over the administration of the affairs of the Columbia Institution for the Deaf. The only duty devolving upon the Secretary of the Interior in relation to this institution at this time is the reception of the annual report thereof and the admission of indigent deaf-mutes of the several States and Territories to that institution for instruction in the collegiate branch thereof. Legislation should be enacted by Congress placing the control and maintenance of the Columbia Institution for the Deaf under the president and board of directors thereof and requiring them to report directly to Congress as to the administration of the institution.

MARYLAND SCHOOL FOR THE BLIND.

Section 2 of the act of Congress approved May 29, 1858 (11 Stat., 294), authorizes the Secretary of the Interior to place for instruction in an institution for the blind, in the State of Maryland or some other State, the indigent blind children of teachable age who are children of persons actually engaged in the military and naval services of the United States. No permits for this class of beneficiaries were issued during the past year.

SUPERINTENDENT OF THE UNITED STATES CAPITOL BUILDING AND GROUNDS.

The Superintendent of the United States Capitol Building and Grounds, in his annual report of the operations of his office, states the prolonged presence of Congress, unusual as to length of session, has permitted little work to be done in addition to the general upkeep required of the Capitol Building. Items of repair and upkeep approximate 1,600 in number, the most important work of the kind being the repainting of the central portion of the Capitol and the dome. The central portion of the Capitol being constructed of sandstone, painting at intervals of about four years becomes necessary in order

to properly preserve the building from deterioration. The dome being of iron construction, the frequent inspection and calking of the joints, followed by painting, has been resorted to in order to protect this structure from the danger of corrosion by the weather.

By the removal of all heating apparatus from the Capitol Building it has been possible to make a change in method of furnishing the air supply to the Hall of Representatives. In that portion of the House wing formerly occupied by the heating plant for the House there has been constructed a new receiving air chamber containing a tempering vat and wire screens for washing the air now taken from the clean court situated between the central building and the House wing. The absence of a heating plant in the Capitol Building renders this method possible, and the quality of air thus obtained is shown by examination to be far purer than obtained through the former system of tunnel supply; the House tunnel has been abandoned, and it is probable that the latter method of air supply may be utilized in the Senate wing of the Capitol.

Appropriations have been made for the resurfacing of the terrace, and for the resurfacing of the Capitol Plaza. These are both important measures, that of the terrace providing for the possibility of again using the decorative plant cases for the purpose for which they were intended; in addition to this, much space in the terrace rooms may be rendered available for storage and other purposes, while the condition of the Plaza is such that it compares unfavorably with the streets of the surrounding approaches to the Capitol Grounds. The damage to the trees resulting from the severe storm of July 30, 1913, has been repaired as far as possible by the aid of tree surgery. The trees have been sprayed at proper intervals as a protection against the ravages of tree pests; shrubbery has been trimmed, and the lawns are generally in good condition.

House Office Building.—One of the most important constructive operations was the raising of the roof of the House Office Building, and the construction in the additional space thus secured of 48 new office rooms for Members of the House of Representatives. All of these new rooms contain practically the same equipment as those on the lower floors of this building, and in addition thereto a storage room has been constructed for each room on the opposite side of the corridor. The raising of the roof in stretches of 400 feet or more while the building was occupied, and without discomfort to the occupants, is a somewhat unusual attempt when the construction and weight of the roof to be raised is considered.

Engine house and Senate and House stables.—The usual repairs have been made to these buildings, and a shed, fronting on C Street, badly damaged by a fire occurring March 28, 1914, has been rebuilt, and electric installation connected with the mains of the Capitol.

Botanic Garden.—The severe storm of July 30, 1913, accompanied with hail, wrecked many of the windows of the plant houses. Three thousand panes of glass were broken. This damage has been repaired, and greenhouse No. 4 rebuilt and painted, and a large number of minor repairs made.

Courthouse, District of Columbia.—In addition to the customary work at the courthouse, the old courthouse building has been completely rewired, a new vacuum heating system has been installed, and the same connected with the heating main of the power plant of the Interior Department.

Columbia Hospital for Women and Lying-in Asylum.—Under the sundry civil act approved June 23, 1913, appropriation was made for the construction of a new building for this hospital, the plans for which were authorized in the District of Columbia appropriation act approved June 26, 1912. At the close of the fiscal year excavations and concrete foundations had been put in place; general brickwork completed to the third floor line, and roughing in of steam fitting and plumbing carried as far as possible, and the steel frame work all in place.

Expenditures.—Expenditures during the year were as follows: Capitol Building and repairs, \$30,000; painting dome and central portion of the Capitol, \$16,970; improving the Capitol Grounds, \$30,000; engine house and Senate and House stables, \$1,500; repairs to courthouse, \$5,000; Capitol power plant, \$175,700; maintenance of House Office Building, \$51,942.60; maintenance of Senate Office Building, \$56,260; and for the additional story of the House Office Building, \$220,370.

Enlarging the Capitol Grounds.—The deficiency act, approved August 26, 1912 (37 Stat., 605), requires the Secretary of the Interior "to rent for such periods and under such terms and conditions as he may deem proper any building, or buildings, or vacant lands," acquired for enlarging the Capitol Grounds under the sundry civil acts of June 25, 1910 (36 Stat., 739), and March 4, 1911 (36 Stat., 1414), until their removal becomes necessary. Under this authority squares 634 and 685 were acquired through condemnation proceedings, on which were located, in all, 92 buildings. All of the buildings were turned over by this department to the Superintendent of the United States Capitol Building and Grounds on or prior to August 15, 1913.

They were advertised and sold on August 16, 1913, to Mr. Hugh J. Phillips, of Langdon, D. C., for the sum of \$7,333.13, he to remove the same and clean up the débris. Mr. Phillips did not formally take possession of the buildings until September 10, 1913, from which date he was to have been allowed 90 days in which to raze the buildings and remove the material. He has not complied with the pro-

visions of his contract, and the department and the Superintendent of the Capitol Building and Grounds now have under consideration the taking of proper action to complete the work at the expense of the contractor and the surety on his bond.

The act of March 4, 1913, appropriated \$35,000 for the expense of removing said buildings, the work to be done under the supervision of the Superintendent of the Capitol Building and Grounds, but, as above stated, a contract was made with Mr. Phillips for their removal. The act of August 1, 1914 (Public, No. 161), reappropriates the unexpended balance of said appropriation and provides that it may be used for the purpose mentioned in the act of 1913. Part of the appropriation has been expended in grading to some extent the east square.

The act of Congress approved June 23, 1913 (38 Stat., 44), provides:

Enlarging the Capitol Grounds: To complete the acquisition of squares numbered six hundred and thirty-two, six hundred and eighty, six hundred and eighty-one, six hundred and eighty-two, six hundred and eighty-three, six hundred and eighty-four, seven hundred and twenty-one, seven hundred and twenty-two, seven hundred and twenty-three, and all that part of square numbered six hundred and thirty-three lying east of Arthur Place, provided for by the act entitled "An act making appropriations for the sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes," the sum necessary, in addition to sums already appropriated, to pay the amounts awarded by court commission under the statute, \$2,823,972.35.

The act of June 25, 1910, being the first act authorizing the condemnation of the squares herein mentioned, provides that the proceedings in connection with the condemnation of said squares shall be in accordance with the provisions of the act of August 30, 1890 (26 Stat., 413), which declares that when the report of the commissioners appointed to appraise the value of the property "shall have been confirmed by the court the President of the United States shall, if he think the public interest requires it, cause payment to be made to the respective persons entitled according to the judgment of the court," etc.

The report of the commissioners who condemned the $9\frac{1}{2}$ squares mentioned in the act of July 23, 1913, authority for the condemnation being contained in the act of July 25, 1910, was confirmed by the Supreme Court of the District of Columbia on February 24, 1913.

The total value of said $9\frac{1}{2}$ squares, as shown by the report of the commissioners, is \$3,204,435. Squares 634 and 685 cost the Government \$1,119,036.50. The total value of the $11\frac{1}{2}$ squares, 2 of which have been paid for, as fixed by the commissioners that appraised them, is \$4,323,471.50.

Some time after the Supreme Court of the District confirmed the report of the commissioners who condemned the $9\frac{1}{2}$ squares, said report was laid before the President for consideration, as provided by the act

of August 30, 1890, who in a letter addressed to the Attorney General on March 18, 1914, stated, after reviewing the entire proceeding:

Now, therefore, I, Woodrow Wilson, President of the United States, by virtue of the authority vested in me by law, do hereby declare that the public interest requires said real estate shall not be acquired by the United States for the sum fixed in said appraisal and confirmed by the court.

House joint resolution 331, "relating to the awards and payments thereon in what are commonly known as the Plaza cases," was approved on October 22, 1914. This resolution authorizes the President to appoint a commission of three men to complete the acquisition "by the United States of so much of the real estate" in the squares therein mentioned as "in the opinion of the President is desirable for the extension of the Capitol Grounds."

GENERAL EDUCATION BOARD.

This corporation, which was created by the act of Congress approved January 12, 1903, section 6 of which requires the corporation to annually file with the Secretary of the Interior a report, in writing, stating in detail the property, real and personal, held by the corporation, and the expenditure or other use or disposition of the same, or the income thereof during the preceding year, has for its object the promotion of education within the United States. The corporation owns no real estate, its property consisting of securities and money divided into various funds, according to the purpose for which it is to be used.

On June 30, 1914, the principal funds belonging without restriction to the board amounted to \$33,939,156.89 invested as follows: Bonds, \$18,812,610.69; stocks, \$15,126,546.20.

The income from the above funds, together with the income from undisbursed income, including income earned but not received, amounted during the year to \$2,417,079.62. The balance of income from previous years as of June 30, 1913, amounting to \$5,676,678.01, increased the total to \$8,093,757.63.

Disbursements from income during the year were as follows:

To schools and colleges.....	\$2, 025, 742. 57
Southern farmers' cooperative demonstration work.....	133, 237. 57
Girls' canning and poultry clubs.....	53, 250. 35
Maine farmers' cooperative demonstration work.....	11, 782. 74
Maine boys' and girls' clubs.....	1, 713. 50
New Hampshire farmers' cooperative demonstration work.....	4, 594. 79
Negro rural school supervisors.....	20, 056. 83
Salaries and expenses professors of secondary education.....	30, 716. 67
Rural organization service.....	34, 048. 71
William Jewell College, interest on deferred payment.....	7, 973. 33
Conference expenses, high school professors in New York.....	970 62
Expenses.....	45, 806. 27
Total.....	2, 869, 893. 95

This leaves an undisbursed balance of income on June 30, 1914, of \$5,223,863.68. It is invested as follows: Bonds, \$2,106,267.05; stocks, \$1,693,573.86; income receivable, \$272,258.50; cash, \$1,151,764.27.

It should be noted, however, that against this balance there are unpaid appropriations amounting to \$5,843,901.25.

The John D. Rockefeller special fund is a fund which Mr. Rockefeller controls as to principal and income.

In a previous report a gift to the University of Chicago of \$9,912,540.74 was published. One-tenth of this gift (or securities and cash representing it) is payable each year. The income from the unpaid balance, however, remains the property of the board subject to Mr. Rockefeller's direction. This accounts for the disparity between the balance of the John D. Rockefeller special fund and the income account of the same name. On June 30, 1913, the principal fund amounted to \$373,997.22. Gains on securities sold were \$268.56, making a total of \$374,265.78. This was given to the Rockefeller Institute for Medical Research, thus wiping out the original principal fund.

The income earned during the year was \$380,893.67, the balance from previous years (\$748,152.63) increasing the amount to \$1,129,046.30.

Disbursements during the year were as follows:

Gift to the Rockefeller Institute for Medical Research.....	\$617, 688. 79
Expenses.....	649. 13
Total.....	618, 337. 92

This leaves a balance of \$510,708.38, which is invested as follows: Bonds and stocks, \$307,189.98; income receivable, \$66,261.84; cash, \$137,256.56.

The Anna T. Jeanes fund, the income to be used for negro rural schools, amounts to \$200,000. It is invested as follows: Bonds, \$182,877.51; stocks, \$16,645; cash, \$477.49.

The income from this fund during the year was \$10,594.97. Added to the balance from the previous year the total available income amounted to \$18,261.71. Of this, \$8,998 was appropriated and paid to various schools, and \$13.69 paid out for expenses, leaving a balance of \$7,886.69 in cash, and \$1,363.33 income receivable, making a total of \$9,250.02.

MARITIME CANAL COMPANY OF NICARAGUA.

Section 6 of the act of Congress approved February 20, 1889, entitled "An act to incorporate the Maritime Canal Company of Nicaragua" (25 Stat., 675), provides:

Said company shall make a report on the first Monday of December in each year to the Secretary of the Interior, which shall be duly verified on oath by the president

and secretary thereof, giving such detailed statement of its affairs and of its assets and liabilities as may be required by the Secretary of the Interior, and any willfully false statements so made shall be deemed perjury and punishable as such. And it shall be the duty of the Secretary of the Interior to require such annual statement and to prescribe the form thereof and the particulars to be given thereby.

The report of this corporation when received will be duly transmitted to Congress. In view of the fact, however, that the Maritime Canal Co. of Nicaragua has no relations whatever with this department and the Secretary has no duty to perform thereto except as specified in the above-mentioned law, the act should be so amended as to require the corporation to submit directly to Congress such form of report as it may prescribe.

APPENDIXES.

APPENDIX A.

Progress in the classification and utilization of the public lands.

Those who have thought that all of the public domain of any value had been taken up years ago may be interested to know that in the 16 months between March 4, 1913, when the present administration came in, and June 30, 1914, the end of the last fiscal year, intending settlers made entry on 19,426,603 acres of public lands—an aggregate area equal to that of the States of Connecticut, Massachusetts, New Hampshire, and New Jersey.

As it has been charged that all the coal lands and other mineral lands of the West have been withdrawn from sale and are being held withdrawn to the detriment of the mineral industry of the region, it may be of interest to know that during the same period an area nearly or quite equal to that entered has been examined in detail by 40-acre tracts and classified; that is, its character with respect to mineral content has been determined. An area of 15,392,482 acres, equal to that of West Virginia, or to that of Connecticut, Delaware, Massachusetts, and New Jersey combined, has been restored and thrown open to settlement or purchase. This does not include lands that have been found to contain workable deposits of phosphate or possible oil and gas pools, as such lands are still held pending suitable legislation for their disposal or use.

On March 4, 1913, the Government held title to nearly 500 million acres of land, of which nearly 200 million acres had been more or less permanently withdrawn from purchase as national forests, parks, monuments, etc., and about 70 million acres had been temporarily withdrawn for classification—that is, for determination whether they should be sold under the coal-land law or other mineral laws, under the timber and stone act, under the desert-land act, or as plain homesteads—leaving 230 million acres open to purchase.

As reconnoissance exploration has revealed the possible existence of deposits of coal, phosphate, or oil and gas, or of water-power sites not previously known, new areas have been temporarily withdrawn until they could be studied in detail; and as detailed surveys have shown just what 40-acre tracts of these newly withdrawn lands contain workable deposits of coal, phosphate, or oil and gas, the land has been classified as coal land, phosphate land, or oil and gas land and has been restored for sale, except that containing phosphate, oil and gas, or certain salts. Lands found to be valuable as water-power sites have been made available for the development of power, but not for other purposes.

Another kind of classification, which has not involved preliminary withdrawals, has been that of certain dry lands which can not be irrigated but which offer to the settler an opportunity for making a living by "dry farming." These lands, when so classified or "designated," may be entered in tracts of 320 acres as enlarged homesteads.

In order to show, by States, what has been accomplished in the treatment of the public lands between March 4, 1913, and June 30, 1914 ($1\frac{1}{2}$ years), maps of 12 States containing public lands are given herewith, showing for each State the areas withdrawn pending the exact determination of their character, the areas examined in detail and restored to entry, the areas which can not be irrigated and are designated as enlarged-homestead lands, and the areas actually entered by purchasers.

As an illustration, the map of Colorado may be explained more in detail. The area of the State is over 66 million acres. During the period under discussion new withdrawals have been made covering 42,276 acres, or nearly two townships, mainly to cover the possible extension of a previously known coal field. Detailed studies have allowed the classification and restoration of nearly 3 million acres. Nearly 4 million acres have been classified as enlarged-homestead lands, and $1\frac{1}{2}$ million acres have been entered by settlers. Roughly, one twenty-fifth of the area of the State has been examined in detail with reference to its mineral and water-power value, classified by 40-acre tracts, and restored to entry. One-sixteenth of the area of the State has been classified as nonirrigable, for entry under the enlarged-homestead law, and entries have been made by settlers that involve one thirty-sixth of the area of the State.

Wyoming offers another interesting example of what has been done. The area of the State is over 62 million acres. A quarter of a million acres have been temporarily withdrawn as a result of preliminary explorations, and more than 4 million acres previously withdrawn have been restored as a result of detailed surveys. The area examined and restored, it will be noticed, is about one-fifteenth of the area of the State, or a territory more than equivalent to the area of Connecticut and Rhode Island. About $1\frac{1}{2}$ million acres have

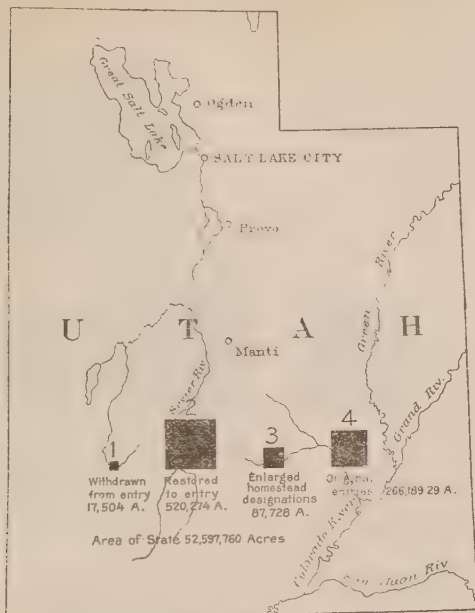


DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN UTAH FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 52,597,760 acres; 1, withdrawn from entry, 17,504 acres; 2, restored to entry, 520,274 acres; 3, enlarged homestead designations, 87,728 acres; 4, original entries, 266,189.29 acres.

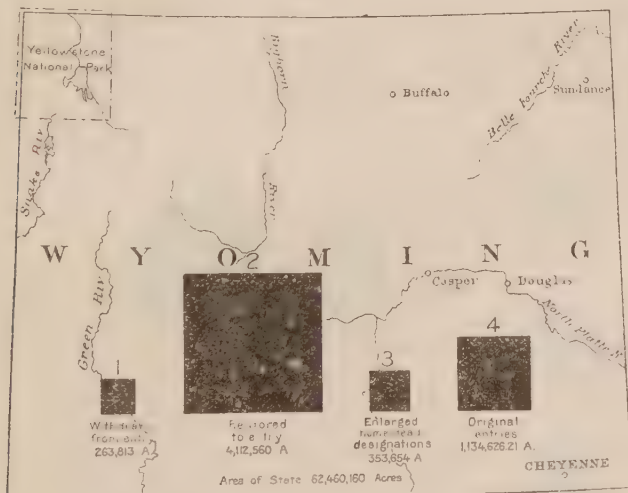


DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN WYOMING FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 62,460,160 acres; 1, withdrawn from entry, 263,813 acres; 2, restored to entry, 4,112,560 acres; 3, enlarged homestead designations, 353,654 acres; 4, original entries, 1,134,626.21 acres.

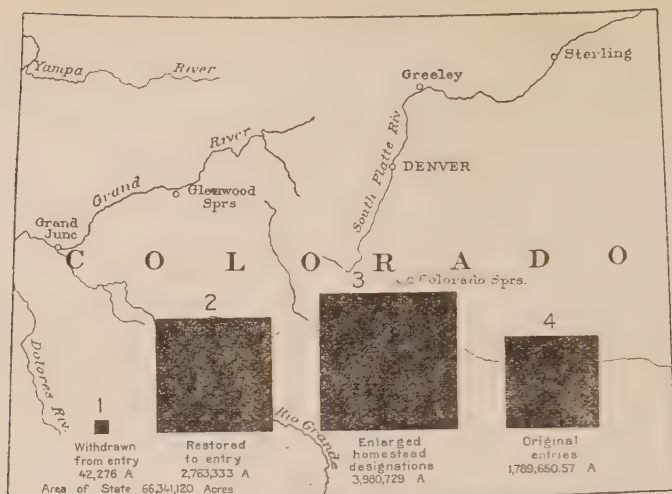


DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN COLORADO FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 66,341,120 acres; 1, withdrawn from entry, 42,276 acres; 2, restored to entry, 2,763,333 acres; 3, enlarged homestead designations, 3,980,729 acres; 4, original entries, 1,789,650.57 acres.

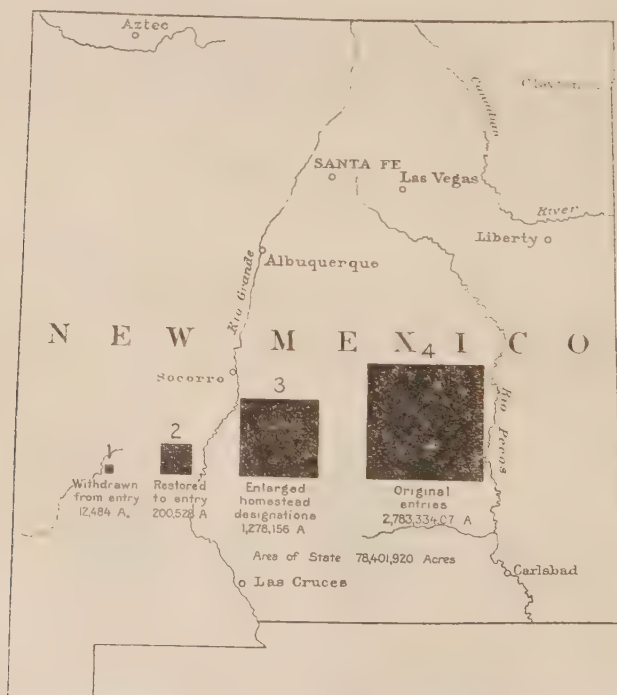
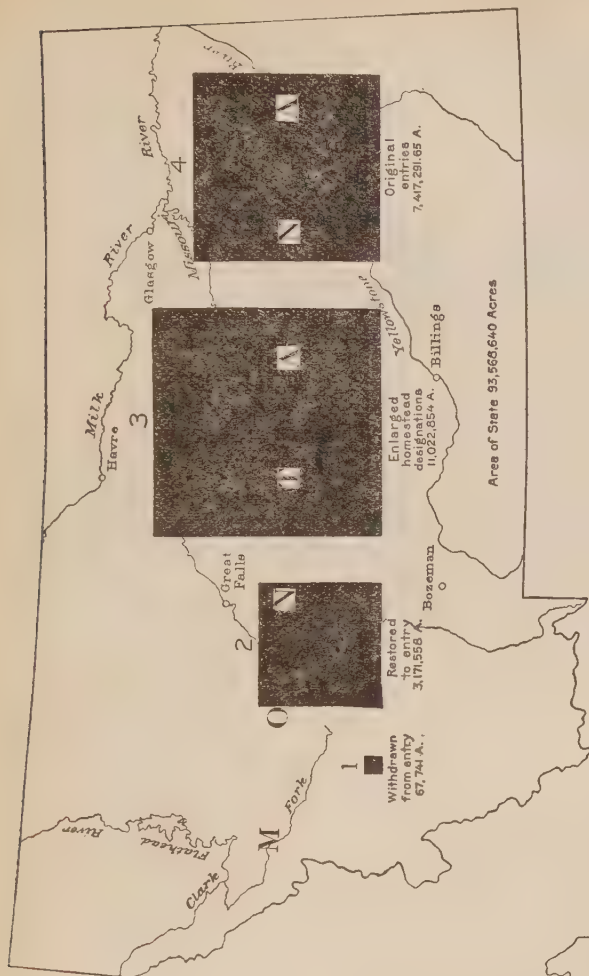


DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN NEW MEXICO FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 78,401,920 acres; 1, withdrawn from entry, 12,484 acres; 2, restored to entry, 200,528 acres; 3, enlarged homestead designations, 1,278,156 acres; 4, original entries, 2,783,334.07 acres.



DIAGRAMS SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN MONTANA AND IDAHO FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

MONTANA: Area of State, 93,568,640 acres; 1, withdrawn from entry, 67,741 acres; 2, restored to entry, 3,171,558 acres; 3, enlarged homestead designations, 11,022,854 acres; 4, original entries, 7,417,291.65 acres.

IDAHO: Area of State, 53,246,560 acres; 1, withdrawn from entry, 113,662 acres; 2, restored to entry, 1,147,706 acres; 3, enlarged homestead designations, 1,789,920 acres; 4, original entries, 1,257,818.91 acres.





DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN WASHINGTON FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 42,775,040 acres; 1, withdrawn from entry, 11,158 acres; 2, restored to entry, 838,093 acres; 3, enlarged homestead designations, 480,785 acres; 4, original entries, 375,433.19 acres.

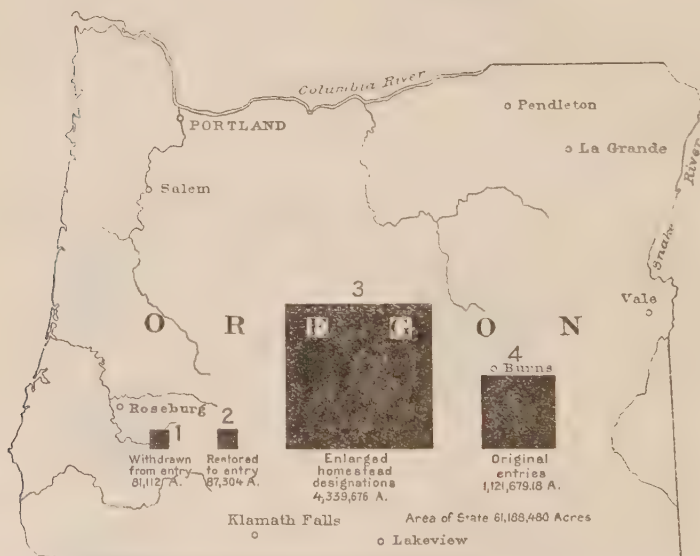


DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN OREGON FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 61,188,480 acres; 1, withdrawn from entry, 81,112 acres; 2, restored to entry, 87,304 acres; 3, enlarged homestead designations, 4,339,676 acres; 4, original entries, 1,121,679.18 acres.

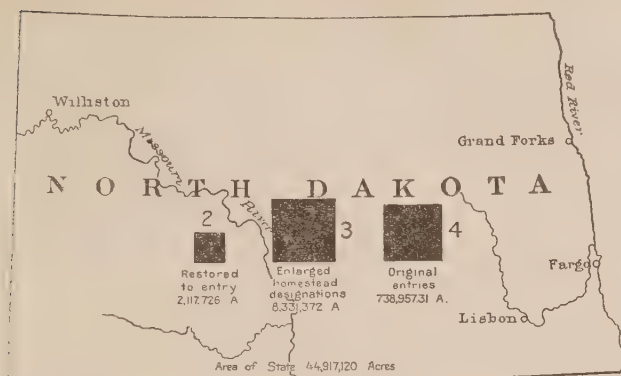


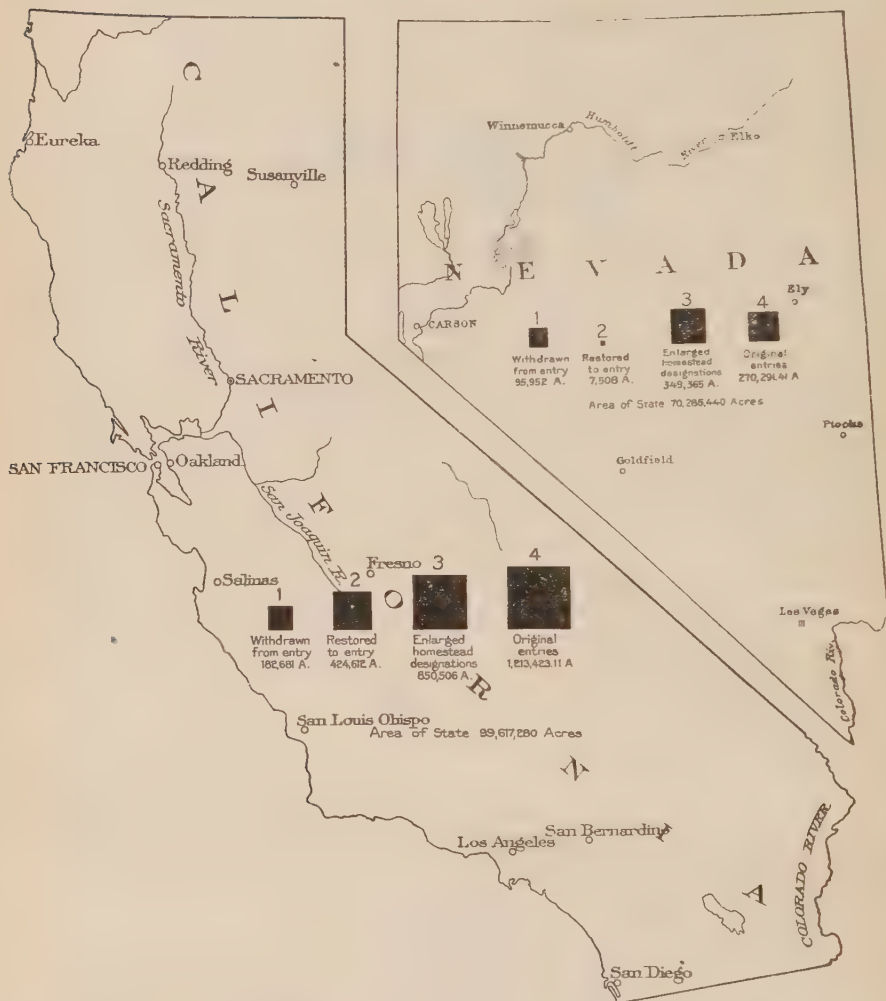
DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN NORTH DAKOTA FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 44,917,120 acres; 1, withdrawn from entry, none; 2, restored to entry, 2,117,726 acres; 3, enlarged homestead designations, 8,331,372 acres; 4, original entries, 738,957.31 acres.



DIAGRAM SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN ARIZONA FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

Area of State, 72,838,400 acres; 1, withdrawn from entry, 4,400 acres; 2, restored to entry, 1,280 acres; 3, enlarged homestead designations, 588,311 acres; 4, original entries, 1,057,907.88 acres.



DIAGRAMS SHOWING THE RELATIVE AREAS OF WITHDRAWN, RESTORED, ENTERED, AND DESIGNATED LANDS IN CALIFORNIA AND NEVADA FOR THE PERIOD MARCH 4, 1913, TO JUNE 30, 1914.

CALIFORNIA: Area of State, 99,617,280 acres; 1, withdrawn from entry, 182,681 acres; 2, restored to entry, 424,612 acres; 3, enlarged homestead designations, 850,506 acres; 4, original entries, 1,213,423.11 acres.

NEVADA: Area of State, 70,285,440 acres; 1, withdrawn from entry, 95,952 acres; 2, restored to entry, 7,508 acres; 3, enlarged homestead designations, 349,365 acres; 4, original entries, 270,291.41 acres.

been determined to be suitable for dry farming, and over 1 million acres, or one fifty-fifth of the area of the State, has been entered by settlers.

Altogether, since March 4, 1913, in 12 public-land States detailed surveys, by 40-acre tracts, have led to the classification and restoration of 15,392,482 acres; 33,453,056 acres have been determined to be suitable for dry farming and designated or listed for settlement as enlarged homesteads in 320-acre tracts; and entries have been made on 19,426,603 acres by purchasers. In the 12 States during the same period only 892,783 acres have been withdrawn.

Land classification, with progress of coal classification and valuation.

STATUS ON JULY 1, 1913.

State.	Withdrawals outstanding.	Coal lands classified and appraised.	Valuation.	Valuation at minimum price.
	<i>Acres.</i>	<i>Acres.</i>		
Arkansas.....	118,718	60,715	\$1,473,762	\$1,214,280
Arizona.....	239,903	7,720	585,086	154,404
California.....	5,037,721	2,844,202	167,888,247	49,715,086
Colorado.....	391,786	2,113	51,824	42,260
Idaho.....	16,051,915	4,550,945	111,127,826	92,313,993
Montana.....	83,833	5,880	117,600	117,600
Nevada.....	5,738,847	953,772	21,274,562	13,514,752
New Mexico.....	15,921,287	1,775,497	30,670,925	30,670,925
North Dakota.....	26,561	1,897	49,909	37,919
Oregon.....		249,897	2,756,427	2,756,427
South Dakota.....	6,431,963	670,272	38,320,001	8,677,373
Utah.....	2,206,030	40	2,000	800
Washington.....	6,615,221	7,180,509	382,207,101	110,449,245
Wyoming.....				
Total.....	58,863,785	18,303,459	756,525,270	309,665,064

STATUS ON JULY 1, 1914.

Arkansas.....		60,715	\$1,473,762	\$1,214,280
Arizona.....	118,718	7,720	585,086	154,404
California.....	17,764	2,871,920	168,490,129	50,264,182
Colorado.....	4,746,603	2,113	51,824	42,260
Idaho.....	338,452	4,731,621	116,710,126	94,875,467
Montana.....	14,203,365	5,880	117,600	117,600
Nevada.....	83,833	958,467	21,257,857	13,544,392
New Mexico.....	5,549,883	2,099,324	34,062,345	34,062,345
North Dakota.....	15,202,533	4,672	79,259	67,269
Oregon.....	26,561	249,897	2,756,427	2,756,427
South Dakota.....		1,048,501	44,316,401	14,203,797
Utah.....	5,988,064	100	3,200	2,000
Washington.....	1,380,928	7,561,929	387,401,682	114,606,837
Wyoming.....	2,951,156			
Total.....	50,607,920	19,602,859	777,305,698	325,911,260

Oil-land withdrawals and restorations.

State.	Withdrawals outstanding July 1, 1913.	Fiscal year ended June 30, 1914.		Withdrawals outstanding July 1, 1914.
		Withdrawals.	Restorations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	230,400			230,400
California.....	1,388,080	120,647	98,283	1,410,444
Colorado.....	87,474			87,474
Louisiana.....	414,720			414,720
Utah.....	1,952,326			1,952,326
Wyoming.....	523,138	88,841	89,584	522,395
Total.....	4,596,138	209,488	187,867	4,617,759

Phosphate-land withdrawals and restorations.

State.	Withdrawals outstanding July 1, 1913.	Fiscal year ended June 30, 1914.		Withdrawals outstanding July 1, 1914.
		Withdrawals.	Restorations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Florida.....	120,457		80	120,377
Idaho.....	916,769	84,507		1,001,276
Montana.....	274,861	34,114	178,760	180,215
Utah.....	107,745		71,552	36,193
Wyoming.....	1,502,724	51,264		1,553,988
Total.....	2,922,556	169,885	250,392	2,842,049

Potash-land withdrawals and restorations.

State.	Withdrawals outstanding July 1, 1913.	Fiscal year ended June 30, 1914.		Withdrawals outstanding July 1, 1914.
		Withdrawals.	Restorations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
California.....	94,407		320	94,087
Nevada.....	39,422	92,160		131,582
Total.....	133,829	92,160	320	225,669

Metalliferous classification.

[Northern Pacific Railroad grant lands, Idaho and Montana.]

	Classified prior to July 1, 1913.	Classified during fiscal year 1913-14.	Classified June 30, 1914.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Mineral.....	217,109	490	217,599
Nonmineral.....	316,320	7,696	324,016
Total.....	533,429	8,176	541,605

Miscellaneous mineral classifications.

[Lands chiefly in present and former Indian reservations.]

	Classified prior to July 1, 1913.	Classified during fiscal year 1913-14.	Classified June 30, 1914.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Mineral.....	1,590	147,053	148,643
Nonmineral.....	1,616,723	2,257,152	3,873,875
Total.....	1,618,313	2,404,205	4,022,518

Power-site reserves.

State.	Withdrawals outstanding July 1, 1913.	Fiscal year ended June 30, 1914.		Withdrawals outstanding July 1, 1914.
		Withdrawals.	Restorations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Alabama.....		120		120
Arkansas.....	17,704			17,704
Arizona.....	187,231	3,200		190,431
California.....	222,341	9,313	8,965	222,769
Colorado.....	254,620	15,930	140	270,390
Idaho.....	291,921	15,614	34,776	272,759
Minnesota.....	10,722	298		11,020
Montana.....	149,900	32,451	25,310	157,041
Nebraska.....		761		761
Nevada.....	15,667	3,420		19,087
New Mexico.....	13,577			13,577
Oregon.....	195,665	73,360	2,315	266,710
Utah.....	376,515	6,295	4,663	378,147
Washington.....	99,498	10,530	12,491	97,537
Wyoming.....	62,994	12,290	1,720	73,564
Total.....	1,898,405	183,612	90,400	1,991,617

Public water reserves.

State.	Withdrawals outstanding July 1, 1913.	Fiscal year ended June 30, 1914.		Withdrawals outstanding July 1, 1914.
		Withdrawals.	Restorations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	1,200			1,200
California.....	94	43,430		43,524
Colorado.....		480		480
New Mexico.....		1,440		1,440
Oregon.....		2,500		2,500
Utah.....	26,303	6,564	160	32,707
Wyoming.....	62,979	20,400	1,468	81,911
Total.....	90,576	74,814	1,628	163,762

Enlarged homestead designations.

	Acreage designated July 1, 1913.	Fiscal year July 1, 1913, to June 30, 1914.		Acreage designated July 1, 1914
		Designa- tions.	Cancellations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	26,959,779	588,311	3,018,054	24,530,036
California.....	1,793	848,713		850,506
Colorado.....	20,382,717	3,963,548	53,968	24,293,297
Idaho:				
Sections 1-5 only.....	5,542,238	1,683,841	32,859	7,193,220
Section 6.....	14,654	38,662		53,316
Total.....	5,556,892	1,722,503	32,859	7,246,536
Montana.....	32,247,483	10,835,795	86,207	42,997,071
Nevada.....	49,503,509	349,365	3,548,941	46,303,933
New Mexico.....	17,907,739	1,330,532	192,275	19,045,996
North Dakota.....	130,502	8,252,142	2,880	8,379,764
Oregon.....	11,617,936	4,327,189	975,300	14,809,825
Utah:				
Sections 1-5 only.....	7,065,989	68,548	168,228	6,966,309
Section 6.....	1,200,686	16,540	120	1,217,106
Total.....	8,266,675	85,088	168,348	8,183,415
Washington.....	3,408,897	474,784	222,828	3,660,853
Wyoming.....	17,620,773	324,319	24,596	17,920,496
Total.....	193,504,695	33,102,289	8,325,256	218,281,728

APPENDIX B.

National park statistics.

Appropriations and revenues of national parks for the fiscal years 1906-1914.

	Appropriation.	Revenue.	Total.
Yellowstone National Park:			
1906.....	\$7,500.00	\$1,522.50	
1907.....	7,500.00	2,808.96	
1908.....	8,000.00	4,699.65	
1909.....	8,000.00	4,790.20	
1910.....	8,000.00	18,188.82	
1911.....	8,500.00	23,420.13	
1912.....	8,500.00	16,476.38	
1913.....	8,500.00	21,980.10	
1914.....	8,500.00	15,439.23	
	73,000.00	109,325.97	\$182,325.97
Yosemite National Park:			
1906.....	5,400.00	1,000.00	
1907.....	5,750.00	9,193.04	
1908.....	30,000.00	14,390.06	
1909.....	30,000.00	16,051.17	
1910.....	30,000.00	21,373.18	
1911.....	62,000.00	35,765.48	
1912.....	50,000.00	23,855.77	
1913.....	80,000.00	19,495.83	
1914.....	125,000.00	23,406.14	
	418,150.00	164,530.67	582,680.67
Sequoia National Park:			
1906.....	10,000.00		
1907.....	10,000.00	159.50	
1908.....	15,550.00	43.15	
1909.....	15,550.00	46.57	
1910.....	15,550.00	121.75	
1911.....	15,550.00	255.65	
1912.....	15,550.00	305.16	
1913.....	15,550.00	353.85	
1914.....	15,550.00	4,094.21	
	128,850.00	5,379.87	134,229.87
General Grant National Park:			
1906.....	2,000.00		
1907.....	2,000.00		
1908.....	2,000.00	63.75	
1909.....	2,000.00		
1910.....	2,000.00	50.00	
1911.....	2,000.00	324.39	
1912.....	2,000.00	173.54	
1913.....	2,000.00	158.68	
1914.....	2,000.00	429.64	
	18,000.00	1,200.00	19,200.00
Crater Lake National Park:			
1906.....	3,000.00		
1907-8.....	7,315.00	25.00	
1909.....	3,000.00		
1910.....	3,000.00	11.00	
1911.....	3,000.00	30.00	
1912.....	3,000.00	323.00	
1913.....	3,000.00	784.18	
1914.....	7,540.00	793.00	
	32,855.00	1,966.18	34,821.18
Mesa Verde National Park:			
1907-8.....	7,500.00		
1909.....	7,500.00		
1910.....	7,500.00		
1911.....	20,000.00	100.00	
1912.....	7,500.00	898.62	
1913.....	15,000.00	615.21	
1914.....	10,000.00	679.00	
	75,000.00	1,2,292.83	77,292.83

¹ Carried to credit of "Miscellaneous receipts" and "General fund" in Treasury.

Appropriations and revenues of national parks for the fiscal years 1906-1914—Continued.

	Appropriation.	Revenue.	Total.
Mount Rainier National Park:			
1907.....	\$2,500.00	\$205.22	
1908.....	3,000.00	170.00	
1909.....	3,000.00	1,104.79	
1910.....	3,000.00	8,953.79	
1911.....	3,000.00	7,748.48	
1912.....	5,400.00	5,370.36	
1913.....	20,000.00	7,301.62	
1914.....	23,400.00	9,040.10	
	63,300.00	39,894.36	\$103,194.36
Wind Cave National Park:			
1906.....	2,500.00		
1907.....	4,400.00		
1908.....	2,500.00	200.00	
1909.....	2,500.00		
1910.....	2,500.00	340.75	
1911.....	2,500.00	340.00	
1912.....	2,500.00	675.00	
1913.....	416.67	528.26	
1914.....	2,500.00	246.17	
	22,316.67	2,330.18	24,646.85
Platt National Park:			
1906.....		37,307.44	
1907.....		178.00	
1908.....		7,021.00	
1909.....		272.00	
1910.....		2,130.31	
1911.....	5,000.00	422.75	
1912.....	10,000.00	165.50	
1913.....	8,000.00	49.95	
1914.....	8,000.00	282.81	
	31,000.00	47,829.76	78,829.76
Glacier National Park:			
1911.....	15,000.00	326.88	
1912.....	69,200.00	1,490.94	
1913.....	75,000.00	4,652.14	
1914.....	100,000.00	4,010.71	
	259,200.00	10,480.67	269,680.67
Total appropriations.....			1,121,671.67
Total revenues.....			385,230.49
			1,506,902.16

Receipts collected from automobiles and motor cycles admitted into the national parks during the period from July 1, 1913, to Oct. 20, 1914.

Name of national park, source of receipt, and fee charged per automobile or motor cycle.	Number of permits issued.		Receipts, season 1913.		Receipts, season 1914.		Total receipts, automobiles and motor cycles.
	Auto-mo-biles.	Motor cycles.	Auto-mo-biles.	Motor cycles.	Auto-mo-biles.	Motor cycles.	
Mount Rainier (Wash.):							
Fee, \$5 per automobile.....	1,190		\$5,950.00				
	1,594				\$7,970.00		
Fee, \$1 per motor cycle.....		184		\$184.00			
		188					\$188.00
Deduction of transmission fees.....			20.82		24.90		
			5,929.18		7,945.10		\$14,246.28
Yosemite (Cal.):							
Fee, \$5 for single round-trip automobile permits.....	129	(1)	645.00	(1)		(1)	
Fine for each failure to secure permit, \$5.....			10.00				
			655.00				
	673				3,365.00		
Deduction of transmission fees.....			.90		8.75		
			654.10		3,365.25		4,010.35

¹ Motor cycles not admitted into Yosemite Park.

Receipts collected from automobiles and motor cycles admitted into the national parks during the period from July 1, 1913, to Oct. 20, 1914—Continued.

Name of national park, source of receipt, and fee charged per automobile or motor cycle.	Number of permits issued.		Receipts, season 1913.		Receipts, season 1914.		Total receipts, automobiles and motor cycles.
	Auto-mob-iles.	Motor cycles.	Auto-mob-iles.	Motor cycles.	Auto-mob-iles.	Motor cycles.	
Crater Lake (Oreg.):							
Fee, \$5 for automobile and motor-cycle season permits, and \$1 for round-trip permits—							
Round-trip permits.....	760	13	\$760.00	\$13.00			
Do.....	1,099				\$1,099.00		
Season permits.....	8				40.00		
					1,139.00		
		18				\$18.00	\$1,930.00
Sequoia (Cal.):							
Fee, \$5 for single round trip of automobiles or motor cycles....	77	12	385.00	12.00			
Season permits, at \$5 each.....	158				790.00		
Deduction of transmission fees.....			1.03		2.39		
			383.97		787.61		1,173.58
General Grant (Cal.):							
Round-trip auto permits, at \$1 each.....	146		146.00				
Season permits, at \$5 each.....	4		20.00				
			166.00				
Motor cycles, at \$1 each.....		3		3.00			
Round-trip auto permits, at \$1 each.....	385				385.00		
Season permits, at \$5 each.....	7				35.00		
					420.00		
Motor cycles, at \$1 each.....		12				\$12.00	
Deduction of transmission fees.....			1.32		2.93		
			164.68		417.07		596.75
Mesa Verde (Colo.):							
Round-trip auto permits, at \$1 each.....	34				34.00		
Round-trip motor cycle permits, at \$1 each.....		4				4.00	
Deduction of transmission fees.....					.48		
					33.52		37.52
NOTE.—Automobiles and motor cycles not admitted to reservation 1913 season.							
Glacier (Mont.):							
Fee, \$5 for automobile and motor cycle, season permits, and \$1 for round trips—							
Automobiles, 9 season and 296 round-trip permits.....	305		341.00				
Motor cycles, 1 round-trip permit.....		1		1.00			
Automobiles, 18 season and 249 round-trip permits.....	267				339.00		
Motor cycles, 4 round-trip permits.....		4				4.00	
Deduction of transmission fees.....			.48		.48		
			340.52		338.52		684.04
Total, all parks.....	6,836	429	8,232.45	203.00	14,017.07	226.00	22,678.52

\$1 each charged for motor cycles entering Sequoia Park, season 1913, prior to receipt of automobile and motor cycle permit book; \$5 fee obtaining thereafter.

Visitors to national parks, 1907 to 1914.

Name of park.	1907	1908	1909	1910	1911	1912	1913	1914
Yellowstone National Park...	16,414	19,542	32,545	19,575	23,054	22,970	24,929	20,250
Yosemite National Park.....	7,102	8,850	13,182	13,619	12,530	10,884	13,735	15,145
Sequoia National Park.....	900	1,251	854	2,407	3,114	2,923	3,823	4,667
General Grant National Park.	1,100	1,773	798	1,173	2,160	2,240	2,756	3,735
Mount Rainier National Park.	2,068	3,511	5,968	8,000	10,306	8,946	13,501	15,038
Mesa Verde National Park.....	(1)	80	165	250	206	230	280	502
Crater Lake National Park....	2,600	5,275	4,171	5,000	² 4,500	5,235	6,253	7,096
Wind Cave National Park.....	2,751	3,171	3,216	3,387	3,887	3,199	3,988	3,592
Platt National Park.....	28,000	26,000	25,000	² 25,000	30,000	² 31,000	² 35,000	² 30,000
Sullys Hill National Park.....	400	250	190	190	² 200	² 200	300	500
Hot Springs Reservation.....	(1)	(1)	(1)	120,000	130,000	135,000	² 135,000	² 125,000
Glacier National Park.....					² 4,000	6,257	12,138	14,168
Total.....	61,335	69,703	86,089	198,606	223,957	229,084	251,703	239,694

¹ No record kept.² Estimate.

Location, area, and characteristics of national parks.

Name.	Location.	When established.	Area (acres).	Private lands (acres).	Visitors, 1914.	Special characteristics.
Yellowstone.....	Wyoming, Montana, and Idaho.	Mar. 1, 1872	2, 142, 720	None.	20, 250	Wonderful scenery, geysers, boiling springs, mud volcanoes and springs, mountains, grand waterfalls, brilliant-tinted canyons, great lake 8,000 feet above the level of the sea; wild animals.
Yosemite.....	California.	Oct. 1, 1890	719, 622	19, 827	15, 145	Mountain scenery, magnificent waterfalls, the Hatch Hetchy and Yosemite Valley, ice-sculptured canyons, glacier lakes, forests.
Sequoia.....	do.	Sept. 25, 1890	161, 597	3, 716.96	4, 667	{The home of the "Big Tree" (Sequoia gigantea), growing to a height of 300 feet with a diameter of 30 feet, the park being 2 feet thick; rugged and picturesque scenery, beautiful cascades and falls, and wonderful caves.
General Grant.....	do.	Oct. 1, 1890	2, 536	160	3, 735	
Mount Rainier.....	Washington.	Mar. 2, 1892	207, 360	18.2	7, 090	{Glaciers and wild mountain scenery.
Crater Lake.....	Oregon.	May 22, 1902	199, 360	2, 458.11	3, 592	
Wind Cave.....	South Dakota.	Jan. 9, 1903	10, 522	160	130, 000	{Rugged mountain scenery, beautiful lake within the crater of an extinct volcano, etc.
Platt.....	Oklahoma.	July 1, 1902, } {Apr. 21, 1904	848.22	None.	502	
Mesa Verde.....	Colorado.	June 29, 1906	42, 376	880	125, 000	{Set aside to preserve the prehistoric ruins of an ancient people; rugged scenery.
Boundary changed.....	do.	June 30, 1913	48, 966.4	993	14, 168	
Hot Springs Reservation.....	Arkansas.	June 16, 1880	911.63	None.	500	{Famous for its thermal springs, having wonderful medicinal qualities.
Glacier.....	Montana.	May 11, 1910	981, 031	16, 668.11	1 500	
Sullys Hill.....	North Dakota.	Apr. 27, 1904	780	None.		{Famed for its beautiful lakes derived from glaciers, lofty mountains clad with forests, magnificent glacial formations, numberless waterfalls. Game, fish, and birds abound.
Casa Grande Ruins.....	Arizona.	Mar. 2, 1889	480	None.		

1 Estimated.

These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.

REPORT OF THE COMMISSIONER OF INDIAN AFFAIRS.

DEPARTMENT OF THE INTERIOR,
OFFICE COMMISSIONER OF INDIAN AFFAIRS,
Washington, September 21, 1914.

SIR: I have the honor to transmit herewith the eighty-third annual report of the Bureau of Indian Affairs, covering the period from July 1, 1913, to June 30, 1914.

* * * * *

During the fiscal year covered by this report there has been the greatest activity in pushing farming and other industrial activities on Indian reservations, in purchasing tribal herds for Indians in order to stock their reservations with cattle, in upbreeding the low grade of horses, sheep, and cattle belonging to the Indians, in suppressing the liquor traffic among Indians, in protecting the Indians in their property rights—and particularly the Indian minors of Oklahoma—in bringing about cooperation among the employees of the Indian Service and coordinating and unifying their efforts in promoting the best interests of the Indians, in raising the standard of Indian schools and providing school facilities for Indian children heretofore without school advantages, in improving the deplorable health conditions of the Indians and providing hospitals for thousands of Indians suffering with trachoma and tuberculosis, in improving the purchasing system of the Indian Service, in procuring needed legislation for promoting the industrial advancement of the Indians, and in general endeavoring to place the Indian Service, which I found disorganized and discouraged, on a sound, economical, efficient business basis, working in harmony and with enthusiasm with a view of promoting the best interests of the Indians, who are the wards of the Government. The following pages cover in narrative and statistical form these various activities.

INDIAN VIEWPOINT.

No real understanding can be had in any work involving social service unless there is a clear comprehension of the viewpoint of those served. With that thought in mind I have endeavored in every way practicable, by personal interviews and by personal examination of correspondence with Indians when possible, to ascertain clearly their thoughts and ideas in connection with efforts being carried on for their benefit. I find this of extreme value, because oftentimes the Indian's objection to various plans made in his behalf may be based on minor consideration which can be eliminated easily to the satisfaction of the Indian and without seriously interfering with the successful outcome of the plans devised for his interests.

As the individualization of the tribal property takes place the Indians' interests in their personal belongings develop. In order that I might definitely know the number of Indians visiting the city, a register has been established, and since February 7, 1914, over 94 Indians have called at the office. Probably a larger number of delegations than ever before have also visited Washington, and I have made it a practice in the case of every delegation and every indi-

vidual Indian to understand reservation matters from the Indian's point of view and to give them the personal attention which is their right and their due.

INDIAN EDUCATION.

PUBLIC SCHOOLS.

The year has been especially marked by the large increase in the number of Indian pupils enrolled in the public schools throughout the United States. There are now more Indian pupils in these schools than there are in all the Indian schools under the control of the Government.

Except for the necessity of increasing school facilities for the Navajoes and Papagoes, the Indian school system is very close to the turning point as regards an increased enrollment of pupils. On the Cheyenne River Reservation the number of Indians in public schools during the last year increased 100 per cent over that of the year previous. From such reservations as Kiowa, White Earth, Omaha, and Santee, and among the Five Civilized Tribes, increases in attendance in the public schools are reported.

Several factors have contributed to this trend of affairs. I have encouraged the entrance into the public schools of Indian children, because it affords training of the greatest value, and furnishes an excellent opportunity to begin the cooperation of the Government with the State in the education of the Indian that must surely come and which will hasten the solution of the Indian problem. State authorities are more and more coming to a full realization of the necessity of an early assumption of their obligation with reference to Indian education. They appreciate the fact that the Indian is assuming his part in local affairs, and that an intelligent citizenship is essential to the welfare of the community. Indian parents themselves show a marked preference for this form of education. It permits their children to remain with them in their homes, the separation from which has been heretofore their chief objection to enrollment of their children in Government boarding schools. With his children in the public school, the advanced Indian who wishes to remain on his allotment is able to do so, and the backward Indian who is tempted to follow his children to the boarding school, living in camp near by, can be encouraged to remain on his allotment.

COOPERATION WITH STATE AUTHORITIES.

For the intermediate types, various forms of cooperation with the public schools have been employed in order to provide educational facilities for Indian children, the office having in mind not only the affording of educational opportunities, but also lending of aid only to the extent that it seemed necessary and in such manner that it could be withdrawn easily as soon as the Indian finds himself able to do without this assistance. In some cases the buildings and grounds of Government Indian schools have been turned over to the public-school authorities for use on condition that they enroll on equal terms with white children all Indian children of the district; in others the buildings are owned by the public-school authorities and a part of the teaching force employed by the Indian Office; in others, the

schools are consolidated public-school districts, the Indian Office furnishing transportation for Indian children to and from school daily; at others, where a few white pupils attend a school largely made up of Indian pupils, the State authorities are allowed to supplement the salary of the teacher employed by the Indian Office. In order to effect enrollment in public schools of Indian children who reside outside the public-school district, tuition has been paid in accordance with the requirements governing the enrollment of all non-resident pupils.

PAYMENT OF TUITION.

Until recently the office paid tuition in order to procure the enrollment of Indian children in public schools where their parents were not taxpayers. It became necessary to modify this plan, however, for the Comptroller of the Treasury, in a decision of October 22, 1913, ruled that the Federal Government was not authorized to pay tuition of Indian children legally entitled to attend the State public schools. For example, in the State of California all children born therein are citizens of the State, and entitled to public-school facilities. A contract in which the Federal Government agreed to pay for their enrollment in the public schools would be illegal, lacking consideration, the State doing only what it was legally under obligation to do. In a Montana case it was held that if Indian parents paid taxes their children were entitled to public-school facilities and a contract for the payment of tuition would be void.

BENEFITS OF PUBLIC-SCHOOL TRAINING.

The typical Indian reservation represents the most satisfactory condition in which to bring about the assimilation of the Indian race. After allotments have been made the Indians are encouraged to improve them; allotments soon become available for purchase, and white settlers begin building homes among those of the Indians. Their numbers increase until they feel the necessity of organizing public-school districts. When this is done it is a very easy step for them to permit the attendance of the children of their Indian neighbors with whom they have been associated. The Indian is thus immediately led into the most vital social organization of a community, and the next step, which is easily taken, is for the Indian parent to participate in its management, and from this to participate in the affairs of the township and county.

This process of disintegration of the Indian reservations is a splendid example of the elimination of the Indian as a distinct problem, either for the Federal or the State governments. The most distinctive element aiding in this growth is the public school. In the acquiring of a practical knowledge of conversational English and in the opportunities that are there afforded the Indian to learn and appreciate the "better ways" of the white man the public schools are the trysting place in the winning of the race.

NAVAJO AND PAPAGO SCHOOLS.

The Indian Service is extending its schools in the Navajo and Papago countries particularly. For these Indians additional school facilities must be provided. During the past year, for the Navajos,

a day school has been constructed at Lukai Chukai, an additional dormitory at the Chin Lee boarding school, additions to two dormitories at the Western Navajo School, three cottage dormitories at the Pueblo Bonito, and the Marsh Pass School has been completed. To further increase school facilities at Pueblo Bonito and at the Tohatchi boarding school one group of pupils will be enrolled at each of these schools for six months and another almost entirely new group will be enrolled for the other six months. These school plants will be in continuous use during the 12 months of the year. With these additions to school plants and change in the method of enrolling pupils educational facilities for the Navajos will be increased nearly 500.

IMPROVEMENT IN METHODS OF INSTRUCTION.

The work of the schools during the past year has been of high order. One condition which has contributed to this result has been the increased amount of attention that has been given by the office to the professional work of our teachers. They have been impressed with the necessity of employing the very best means known to modern educators with reference to the materials and the methods used in the instruction of their pupils. Reading circles have been maintained at all the schools by the direction of the Indian Office, which has also included other instructors than the classroom teachers. Increased attention has been given to the purchase of libraries for pupils; educational leave has been available for teachers, which permits them to attend summer institutes or other educational institutions on full pay for a period of two weeks in order to further acquaint themselves with the best methods of instruction and receive the enthusiasm and inspiration that comes from mingling with other teachers, particularly those from the public schools. Theses on some professional subject which requires considerable reading have been required from them, and to make their accomplishments along these lines of vital importance automatic promotions of certain grades of teachers have been made of not less than \$2.50 per month where their record during the year has been excellent.

VOCATIONAL TRAINING.

The necessity for the vocational training of Indian pupils is being appreciated now by our instructors, and as a result the work along these lines has been much better. Superintendents in their annual report are referring to the closer correlation they have been able to effect between the academic and industrial work. Chilocco has had an unusually successful year in the results that have been obtained along the line of agricultural and allied subjects. During the past year it has presented a very strong course, which has been popular with Indian pupils. Flandreau has extended the work for two years, so that pupils when they leave school will be able to take charge of their own farm, if they have land, or take a place in a shop or with some business concern and earn a fair livelihood. Without the addition of these two years to the course it has been found not only at Flandreau, but at other schools as well, that the pupil leaves just at a time when he is able to profit by taking vocation instructions.

PUEBLO SCHOOLS.

Last year it was necessary to report that in some of the pueblos there was marked opposition to Indian education. It is pleasing to note that this is gradually disappearing. On the Moqui Reservation, where the feeling was very bitter against the Government and also as between the Hopis and the Navajos, the superintendent now reports that it is practicable to construct a day school where both factions will attend, showing clearly that the animosities that have hindered the advancement of these people for some time are gradually disappearing.

OKLAHOMA SCHOOLS.

The \$300,000 appropriation in aid of the common schools among the Five Tribes of eastern Oklahoma has been distributed on practically the same terms as was done year before last. Marked improvement has been noted, however, in the ease with which this has been accomplished; the office force, as well as the recipients of this money, the school districts, being more familiar with the principles of distribution. Results have been good and a larger number of Indian children have been enrolled in the public schools from those tribes than heretofore.

NEW SCHOOL RULES.

One accomplishment of considerable note has been the revision of the Indian school rules, which were approved by the department July 14, 1913. The last revision was made in 1904. The Indian problem has advanced so far beyond conditions prevalent at that time that the rules were in many respects inapplicable to present conditions. They now fit the service, and not only serve as directory to the field officials with reference to school matters, but set a standard of accomplishment which comports with the advancement of Indian education.

ESSAY CONTEST.

The contest in essay work open to all Indian pupils was continued last year as the year before, the subject being "Citizenship." While it was difficult in many respects, the elementary conception which the pupils were able to develop, not only with reference to civic problems, but with respect to their obligations to their fellows and their Government, was highly satisfactory. Something like 9 gold medals, 52 silver medals, and 548 bronze medals were distributed to Indian pupils. So satisfactory have been the results that it is planned to continue this contest from year to year.

PHYSICAL TRAINING.

The physical welfare of the pupils has been given careful consideration, only a very few schools now reporting that they have no up-to-date playground equipment. All dormitories have ample air space, school buildings are light and airy, and pupils are not permitted to work in damp or ill-ventilated laundries or industrial buildings.

MORAL TRAINING.

The moral interest of pupils has been met by the increased attention placed upon this phase of instruction, superintendents and instructors having been told that this subject must receive their constant attention. Not only must provision be made for each pupil to receive religious instruction at the hands of the denomination which the pupil or his parent may select, but also special days must be set apart for the consideration of such questions as the effect of alcoholic liquors upon the human body and prevention of cruelty to animals.

* * * * *

HEALTH.

With the impetus given to the health work by the increased appropriations for the fiscal year 1914 comes the realization that the much neglected sanitary conditions of the past among the Indian tribes can be tremendously improved, and sanitary homes and good health replace the squalor of the past, on most of the reservations.

The opening of many Indian reservations for settlement by white men has made the health problems more pronounced in the districts where the white settlers have come in contact with the Indians. The Indian must not only receive treatment, and, if possible, be cured of trachoma, tuberculosis, etc., but he must be trained to live in sanitary homes and care for his personal hygiene, so that he will not become a menace to his neighbors, either Indian or white.

The work of eradicating tuberculosis and trachoma from among the Indians will be continued in a most aggressive manner. The children must be protected in the schools as well as in the home. Disease is easily transmitted to the homes of the healthy from the homes of those afflicted with tuberculosis, trachoma, etc., and it becomes an imperative duty of the Indian Service to see that the schools maintained by the Government for the education of Indian children do not become a focus for the transmission of disease between tribes rather than an instrument for the eradication of disease.

In the Indian schools there has been a determined effort to detect the tubercular cases in their incipiency and place them in a sanitarium for treatment, where there is one available, or return the child to the home, more for the protection of the well children than in the hope of helping the afflicted one. The trachomatous patients are segregated in the schools and kept under treatment.

There is a vital necessity for more hospitals to care for these children returned to their homes. Often they represent families which have a number of cases of tuberculosis needing sanitarium treatment, or the removal of a case of active tuberculosis to a healthy home may introduce the disease there and form another source of infection to the surrounding Indians.

At the close of the fiscal year there were 51 hospitals with a combined capacity of 1,432 patients, and 6 under construction, to care for a population of 331,250 persons with a high percentage of tuberculosis and trachoma. Out of 199,438 Indians on reservations 67,895 were examined last year. Tuberculosis was present in 8,245 cases and trachoma in 13,841, and it is estimated that there are 21,980

suffering with tuberculosis and 35,769 afflicted with trachoma. The death rate per thousand last year was 30.76 per cent, and the percentage of deaths due to tuberculosis was 31.83, while the birth rate per thousand was 38.79.

In the appropriation act for the next fiscal year Congress has given the health work \$300,000. There will be \$100,000 available for hospital purposes besides the direct items for a sanitarium in the Choc-taw Nation and one at Red Lake or Leech Lake and one on the Fond du Lac Reservation. With this additional money it is proposed to build seven small hospitals, at a cost of from \$12,000 to \$15,000 each, on the reservations where the need of medical attention has been most keenly felt rather than place this amount in one or two big hospitals more remotely placed. The smaller hospitals, it is believed, will provide more effective and prompt attention for the sick and at the same time keep the patients near their families.

TUBERCULOSIS.

This is the scourge of the Indian race, and with a full appreciation of the seriousness of the conditions presented an earnest effort is being made to successfully combat the disease. The progress of the work has been hampered heretofore mainly by insufficient funds. I am fully aware of the fact that to perpetuate the Indian race the inroads of tuberculosis must be stayed. To do this it is essential that better sanitary conditions be instituted in the Indian homes, and cleanliness, better ventilation, and sufficient and nourishing food not only be insisted upon, but provided, if necessary.

Realizing the importance of these matters, a study has been made of the physical conditions of the schools with a view to giving the children sufficient dormitory space, playground equipment, and, where necessary, nourishing food suited to their physical condition in addition to the rations now furnished. Every effort is being made to meet conditions of this type as soon as they are discovered.

Regular talks are given to the children on sanitary matters; many of the schools are provided with stereopticon outfits, and where practicable the talks are illustrated.

Constant watching, monthly weighing, the use of the Pullman towel system, daily physical training, use of the playground equipment, and sufficient space and ventilation of the dormitories and school buildings, together with the training being given at home by the field matrons, should result in a stronger race physically in the next generation, as well as the reduction of the death rate to one not in excess of the white race.

TRACHOMA.

The trachoma work has been pushed vigorously during the past year. The field has been divided into five districts, and an ophthalmologist has been assigned to each. He goes to each reservation in his district instructing the reservation physician in the appropriate treatment and methods of operation, and also cares for any of the more serious eye complications needing treatment or operation. On account of the failure to recognize trachoma, the lack of facilities for handling the disease, and the small amounts of money formerly

appropriated, the disease has wrought great havoc among the Indians of every tribe except those in New York.

Trachoma is only second to the tuberculosis scourge and spreads rapidly when it is once introduced. The increase of trachoma is alarming. The service is fully aware of the conditions presented by this disease and is fighting, in accordance with the best precepts of modern medicine, to relieve those afflicted and to prevent the further spread of the disease.

* * * * *

STOCK RAISING.

Since assuming charge of Indian matters I have been impressed with the idea that too many of the natural resources of Indian reservations which are exploited to the profit of the white man might better be developed for the financial benefit of the Indians. Particularly is this true of the grazing lands of the Indians. Probably there are located within the borders of the Indian reservations the most desirable grazing lands in unbroken bodies in the United States to-day. The grass on these lands is in its natural state, usually not heavily grazed. Stock water is available and in all ways an ideal range is presented for the raising of cattle on a large scale. These lands for years have been leased to white cattle owners at a stated rental per head. Vast herds of cattle have been developed by white men on Indian lands and marketed to the increased wealth of the cattlemen and but small return to the Indian landowner. The constant diminution of grazing land throughout the United States has caused a natural increase in the price of meat, and unquestionably under modern conditions this price will not diminish. It would seem, therefore, that there is no more lucrative or important industrial opportunity open to the Indians having grazing lands than to do away with the old grazing-leasing and grazing-permit system, and in its place go into the business of stock raising themselves. The Indian is by nature a herdsman, and, with but small teaching, should develop into an ideal stock raiser. With this end in view, I have instituted a plan of creating tribal herds upon those reservations having large areas of tribal grazing lands. The original herds purchased are comparatively small, but in a short time, by careful management, should so increase as to properly graze every acre of Indian grazing land.

During the year nearly one and one-half million dollars were expended in the purchase of live stock for individuals and as tribal herds and also for male animals for improving the grade of cattle, horses, and sheep already belonging to the Indians. The principal purchases were: For Blackfeet Reservation, 44 stallions, at \$23,131, and 102 bulls, at \$12,640. For Colville, 50 bulls, at \$4,860, and 12 stallions, at \$5,000. For Crow, 20 stallions, at \$9,780; 7,021 heifers, at \$306,338; 2,000 steers, at \$79,470; and 251 bulls, at \$20,075. For Cheyenne, 80 bulls, at \$9,680; 682 heifers, at \$33,418; 46 cows with calves, at \$3,197; and 46 mares, at \$5,248. For Crow Creek, 64 cows with calves, at \$3,776; 74 mares, at \$7,410; and 10 bulls, at \$1,350. For Fort Apache, 56 bulls, at \$7,000. For Lower Brule, 12 stallions, at \$6,687; 55 bulls, at \$6,187; and 601 heifers, at \$29,968. For Navajo, 175 rams, at \$2,187, and 4 stallions, at \$940. For Navajo Springs, 20

stallions, at \$4,910; 25 bulls, at \$2,325; and 12 mares, at \$2,020. For Pine Ridge, 1,486 heifers, at \$75,000; 150 cows, at \$6,000; and 25 stallions, at \$12,500. For Rosebud, 248 heifers, at \$12,098; 2,016 cows, at \$133,205; 1,216 mares, at \$166,339; 19 stallions, at \$9,503; and 90 bulls, at \$10,930. For San Carlos, 40 stallions, at \$8,000; 30 bulls, at \$7,440; and 1,000 heifers, at \$37,000. For Shoshone, 101 bulls, at \$9,512. For Standing Rock, 128 heifers, at \$5,117, and 2 stallions, at \$1,180. For Tongue River, 1,046 heifers, at \$49,622; 36 bulls, at \$3,100; and 4 stallions, at \$575; and for Truxton Canyon, 510 cows at \$21,300, and 20 bulls, at \$2,300.

The total purchases for these and other reservations amounted to 267 stallions, 1,048 bulls, 12,272 heifers, 2,510 steers, 3,738 cows, 2,110 mares, 670 horses, 67 mules, 513 sheep, and 469 rams.

This stock has been placed in the care of experienced stockmen, and will not only give the Indians an insight into the practical management of the live-stock industry and enable them to learn proper methods in stock raising, but will furnish a nucleus from which the individual herds can be created by issue or purchase. It will be noticed that the largest herd, comprising 9,021 head of cattle and 251 bulls, was purchased for the Indians of the Crow Reservation under the provisions of the act of April 27, 1904. (33 Stat. L., 352-353.) This herd has been placed in a separate pasture set aside for its exclusive use. They are in splendid condition, and the Indians have cut and stacked 5,000 tons of hay to be fed these cattle next winter.

Many of the Indians have heretofore opposed the plans for the improvement of the grade of animals belonging to them and for replacing the worthless male stock with animals of improved breed. They are, however, gradually beginning to appreciate the benefits to be derived from this policy as the results of such breeding become apparent. This is aptly illustrated by the fact that, although the Indians of the Cheyenne River Reservation were opposed to the establishment of a breeding station on their reservation, the superintendent reports that they have bred over 600 mares at that station during the present season.

While the development of the horse-breeding industry as a means of livelihood for the Indians is largely confined to those reservations located in North and South Dakota and Montana, high-grade stallions have been provided for many of the other reservations in order that high-grade work horses may be provided to enable the Indians to cultivate their allotments, engage in freighting, and for market.

Some idea may be had of the benefits that will be derived by improving the grade of the 1,500,000 sheep belonging to the Navajo Indians living in the Southwest by the fact that experiments during the past year have demonstrated that the result of the first cross between native sheep and high-grade rams is the production of an animal 20 to 25 per cent greater in weight and yielding 50 to 60 per cent more wool of a considerably better grade than that produced by the native Navajo sheep. Owing to the limited amount of funds available for expenditure for the benefit of the Indians living in that locality it is impracticable to introduce a sufficient number of rams to improve the entire number of sheep belonging to these Indians at one time, but the plans outlined contemplate the yearly purchase of such number of rams as available funds will permit to be issued to Indians in payment of labor, which, with those purchased by the

more prosperous Indians with their personal funds and under the supervision of the superintendents in charge of their reservations, will aid materially in the development of this industry.

The cooperation of representatives of the Bureau of Animal Industry has aided materially in the inspection of animals purchased and the eradication of infectious diseases among the animals on the various Indian reservations, particularly the disease of dourine, which had spread to an alarming extent among the horses belonging to the Indians living on the reservations located in Montana and North and South Dakota. In order that individual Indians might not suffer the entire loss resulting from the killing of his animals for the benefit and protection of the tribe as a whole on account of being infected with such disease, where animals are destroyed on account of being infected with glanders, dourine, or other infectious diseases, the Indians to whom they belong are reimbursed their value in an amount not exceeding \$100, in order that those depending on such animals for a livelihood will not be deprived of their means of securing a living, or that persons having a better grade of animals may not feel that they were suffering the entire loss, but that such loss is shared by the tribe as a whole.

The foregoing brief résumé of the year's work in advancing the live-stock industry of the Indians, if compared with past efforts along the same line, will show conclusively that there has been more activity in this branch of work than ever before in the history of Indian administration, and that more has been accomplished than ever before toward making the Indian the beneficiary of all instead of a small part, as heretofore, of the profits to be derived from the exploitation of his own grazing resources.

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FARMING.

Special effort was made during the past year to increase the Indians' interest in farming wherever their lands are adapted to this industry. For this purpose approximately 450 farmers were employed at salaries ranging from \$600 to \$1,200 per annum, there being only a few at the latter salary. Their task is to instruct the Indians how to prepare the soil, the kind of seed to select, and how to plant, cultivate, and harvest, and the best disposition to make of their crops.

The plan generally followed is to district the reservations, station a farmer in each, who keeps in close touch with the Indians, furnishing individual instruction and advice.

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FARMING AND GRAZING LEASES.

The act of June 25, 1910 (36 Stat. L., 855), authorizes Indian allottees who hold their lands under trust patents to lease their allotments for not exceeding five years under regulations prescribed by the department.

The practice of Indians leasing their lands is a poor one at best, as the purpose of allotment was to give each Indian a tract of land which he could call his own and on which he could make an effort

to become a self-supporting member of the community in which he might live. There are many cases, however, in which an Indian can not make beneficial use of his allotment, and in such cases it has been the endeavor of the office to so regulate the leasing as to be of the greatest benefit to the allottee. Old Indians, women, minors, and those engaged in some gainful occupation are, as a rule, permitted to lease their lands. In other cases, where an Indian has more land than he can conveniently care for, he is encouraged to lease part and use the proceeds in improving his retained land.

It has been the aim of the office in cases where Indians have demonstrated their competency to permit them to negotiate their own leases and collect the rentals.

LEASING OF TRIBAL LANDS FOR GRAZING PURPOSES.

On the Sioux reservations the greater part of the land is allotted and the remaining tribal lands are for the most part scattered in small tracts among the allotments. The practice of leasing large districts as tribal pastures has been discontinued, and the various white cattlemen who have been running stock on the open range on these reservations have been notified that their leases will not be renewed and that they must remove all stock this summer and fall.

One of the large grazing districts of the Crow Reservation has been greatly reduced in size, owing to the purchase of cattle for the Indians and the necessity of using part of the district for such cattle.

This plan is in furtherance of the policy of the office to aid the Indians in increasing their cattle holdings and to foster stock industry among them.

It is believed that this plan will enable the Indians on reservations suitable mainly for grazing purposes to acquire a better knowledge of stock raising and to increase their holdings of cattle, and thereby to become self-supporting.

The only Indian reservations remaining where large tracts may be used for grazing purposes are those on which the Apache Indians are located in Arizona and the Crow Reservation in Montana. On the San Carlos Reservation approximately 42,700 head of cattle belonging to cattlemen are being cared for; on the Fort Apache Reservation about 21,375 cattle and 52,000 sheep, and on the Crow Reservation approximately 45,411 cattle and 85,000 sheep.

Steps have been taken on several reservations to determine the number of stock that may be safely carried on the ranges the entire year, taking into consideration the amount of feed during the grazing season, the water available for the stock, and whether there are winter ranges or whether it is necessary to put up hay for the stock. As tribal herds are put on the various reservations and the number of cattle belonging to outsiders reduced or removed entirely reports will be called for showing the conditions on each reservation in order that proper action may be taken to stock the ranges to capacity and to care for the Indian cattle during all seasons of the year. On reservations where there are tribal herds, the superintendents have been instructed to see that the Indians put up sufficient hay to care for the stock during the winter season.

TESTING AND DEMONSTRATION WORK.

Experimental work designed to test the possibilities of the soil and climate in various sections of the country in the cultivation of trees, grains, fruits, and vegetables was carried on at a number of Indian schools, principally at Colville, Blackfeet, Pala, Shoshone, Shivwits, Havasupai, Leupp, San Juan, Pima, Lower Brule, San Xavier, Malki, and Tomah. The most important work of this character, however, was done at the San Juan and Pima Reservations.

At San Juan several years ago the superintendent obtained from the superintendents in charge of the various reservations samples of seed corn grown by the Indians. Corn from over 40 different places was received and planted. Some of this seed matured nicely and did well; where the seed was a failure it was discarded.

The most promising seed was saved from year to year until now the experiments are confined to three distinct varieties of the new corn, consisting of a soft Calico corn received from the Rosebud Reservation, a soft white corn from the Eastern Cherokee Reservation, and the other soft corn from the Havasupai Reservation, which varieties are doing exceptionally well.

Shallu produced a fair crop and succeeded better than kaffir corn. This belongs to a group of grain sorghums, and stands more wet or dry weather than other maize or cane tried in this section. *Vicia Villosa* grew well.

Dry land alfalfa, planted for the first time, is showing evidence of improvement over other varieties.

Pencilaria made enormous yields and is perhaps the greatest and best yielder of any grain forage plant tried. Drought-resisting red clover was planted and apparently will be a success and second to alfalfa as a general hay crop.

Tobacco was raised with good success. The plants were strong and vigorous, grew rapidly, and matured early in the fall.

Beans were planted quite extensively, because this vegetable forms a large part of the bill of fare of the Indians of this jurisdiction.

Various kinds of melons, of which the Indians are very fond, were successfully grown. Among them were a number of new melons, including a winter-pie melon, which is suitable for cooking, and Soboba cantaloupe, which can be kept all winter. New varieties of pumpkins, squash, radishes, lettuce, tomatoes, onions, and other vegetables were tried out with varied success.

With a view of getting the Indians interested in growing timber for shade and other purposes in this barren country where there is no timber except a few cottonwoods along the river and cedar pinions and pines on the mountains, many varieties of tree seeds were planted. The elm, yellow locust, white ash, sugar maple, soft maple, boxwood, osage orange, Carolina poplar, willow poplar, several varieties of willow, box elder, tamarack, cypress, arbor vitae, and a few varieties of pines and fir are making good growth and proving successful.

One of the most important branches of experimental work and one from which large results are expected is the testing and demonstration work in connection with the production of Egyptian cotton at Sacaton, Ariz., under the Pima jurisdiction. This work is conducted under a cooperative agreement between the Departments of Agriculture and the Interior. During the planting season of 1913

15 acres of Egyptian cotton were grown, from which 8,730 pounds of lint were produced at a value of \$1,875. The seed cotton was sold at an average price of 21½ cents per pound. The Indians in this section of the country, by reason of the success obtained with this crop at the farm, are planting cotton seed obtained from the demonstration farm on their own lands. About 200 acres were planted by them during the year, and they were so well pleased with the result of the crop that an increased area was planted this spring.

Egyptian cotton is being largely raised by the settlers in the Gila Valley and to a certain extent in the Salt River Valley. The raising of Egyptian cotton by the whites is of great importance to the Indians, because it creates for the Papagoes and Pimas a market for their labor during the cotton-picking season. This is of especial importance to the Papago Indians, who are usually poor, and for whom the wages received from this industry will be of great importance in raising them to a higher plane of living. The use of Indian labor in connection with Egyptian cotton is supervised by representatives of the Interior Department and the Department of Agriculture, and care is taken to see that the Indians are protected from liquor and improper influences during the cotton-picking season.

Experiments were also made with what is known as Mexican June corn, which produced very good yields.

Large quantities of Bermuda onion sets were furnished to the Indians. A very good grade of this type of onion can be produced by the Indians, and there is a ready sale therefor.

The policy of utilizing Indian school farms at the various reservations not only for the benefit of the schools and the pupils in attendance, but also to demonstrate to the older Indians the possibilities of the soil, was continued during the year.

The demonstration farm at Fort Berthold provided for in the act of June 1, 1910 (36 Stats. L., 455-456), established in 1911 and 1912, is being operated with good results.

MINING ON INDIAN LANDS.

Oil and gas mining operations in Oklahoma have been very active during the past fiscal year. An extensive pool was discovered a little more than a year ago about 14 miles east of Cushing, which has been productive beyond expectations. Another large pool has been discovered near Healdton, about 14 miles west of Ardmore, and wells of large volume have been brought in.

The Cushing oil is a high-grade refining oil, while that obtained from the Healdton field is said to have an asphalt base, to be somewhat inferior to the Cushing oil, but of great value as a fuel oil. Operations have been conducted in other directions, proven fields have been developed, and some "wild-catting" done with probably the usual average of success.

During the year there has been quite a fluctuation in the price paid for crude oil in Oklahoma, which is of concern to the Indians who own oil-producing lands, as their royalties are based on the price of crude oil.

On July 1, 1913, the market price of crude oil in the Oklahoma field was 88 cents per barrel of 42 gallons, which price had been

effective for five months prior thereto. On July 7, 1913, the price was increased to 93 cents, and rose comparatively rapidly, reaching \$1.03 on August 19, 1913, and was finally advanced to \$1.05 per barrel on February 2, 1914.

During the time the price of crude oil was advancing development work was extremely active, with the result that production reached such a stage that the pipe-line companies could not transport all the oil being mined, and on April 8 the market price was reduced to \$1 per barrel, and thereafter reductions were made rather rapidly until it reached 75 cents per barrel, on April 30, since which time no further change has been made. This price of 75 cents per barrel, however, is paid only for the high-grade refining oil. The operators in the Healdton field receive but 50 cents per barrel for their oil.

The oil men in Oklahoma are much concerned regarding the condition of the oil business, and recently a general meeting was held, at which steps were taken to curtail and control the production, with the hope that the price of crude oil would advance. It has been agreed between many of the producers to do no drilling for four months except that positively necessary to protect the lines or to prevent forfeiture of a lease.

There are prospects that oil and gas in paying quantities will yet be discovered on the Shoshone Reservation in Wyoming and the Quinaielt Reservation in Washington. Several leases have been approved covering Quinaielt lands aggregating about 16,000 acres, and the lessees are active in their preparations to begin work. On account of the very rough character of country and its inaccessibility, development work in this section will be extremely expensive.

PREVENTION OF WASTE.

Special efforts have been made to reduce to a minimum the waste incident to drilling for and producing oil and gas on Indian lands in Oklahoma, and this office has had the valuable and hearty cooperation of the Bureau of Mines in this important work. The task has not been an easy one. We have had to combat ignorance and prejudice, and although the results have not been all that could be desired, we are encouraged to believe that there has been some improvement and that oil men are being awakened to the seriousness of conditions.

Waste of oil and natural gas has been particularly noticeable when a new field has been discovered with a production far in excess of expectations, such as the Cushing and the Healdton fields, in Oklahoma, and has been caused by a lack of facilities to care for the production and to the eagerness of each lease owner to get his share. When an oil well of good capacity is discovered in a hitherto unproven field, great activity in drilling immediately follows, and many wells are drilled and a large quantity of oil brought to the surface before pipe-line companies have extended their lines into the territory or tanks can be constructed in which to store the production. The result has been that hurriedly constructed open earthen tanks must be utilized with the consequent waste due to evaporation and seepage. It has happened in some cases that the oil has gotten away entirely and been permitted to flow down the streams. It is said that probably 50,000 barrels of oil were lost in the Healdton field in this manner.

Another source of waste, particularly of natural gas, is that found in connection with drilling operations. As a general rule, operators are not interested in finding gas. They want oil, for which there is a ready market and from which they can derive a greater and quicker income. Thus, when the seeker for oil—particularly when there is a probability of finding oil by drilling to a sufficient depth—has encountered a stratum of gas in his drilling, the practice of some has been to permit this gas to “blow off” or escape into the air and continue drilling for oil. Many million cubic feet of natural gas have been wantonly wasted in this manner in the Cushing field.

Yet another waste, impossible of estimate, has been caused by the failure of operators effectively to confine water encountered in drilling to its own stratum, with the result that it has been permitted to flow into and flood lower oil and gas bearing strata. Not all of this waste has been on restricted lands, which comprise but about 30 per cent of the area on which oil and gas operations are conducted. Probably the greater amount of waste has occurred on lands not under the control of the Government. Some waste is probably unavoidable, but there is no doubt in my mind that the greater part thereof could be avoided if the operators would take proper precautions in advance. Aside from the loss to the landowners of the royalty, there is a greater loss to the State of Oklahoma in general on account of the dissipation of its natural resources.

The lack of a market for natural gas has been due in a great measure to the waste of the gas. A gas-selling corporation will not care to construct its pipe lines into a field producing both oil and gas, while this wanton waste of the gas is permitted, for there would be no assurance that there would be any return on the investment. If proper methods were used to conserve this gas, there seems to be no doubt that it would eventually find a market, and thus prove a source of great revenue.

The Bureau of Mines has made a careful study of drilling methods, and has introduced the so-called mud-fluid system, by which the production from any stratum, whether water, gas, or oil, may be effectively sealed in its own stratum and not permitted to flow into and mingle with the production of other strata.

Contrary opinions are held as to the effectiveness of the mud-fluid method of drilling. It has been highly praised, and it has been adversely criticized. From a careful study of the matter, however, I am convinced that where the method has been given a fair chance and has been employed conscientiously it has done all that is claimed for it. The difficulty is due to failure of operators to prepare to use the method until trouble has overcome them, then there has necessarily been some delay in applying the method, because the apparatus was not at hand. Oil men are conservative. They think their own old methods are sufficient, and hesitate to institute new systems, particularly if there is any additional first cost, overlooking the vast advantages to be gained in the end. They must be educated to the use of proven scientific methods. The efforts of the Bureau of Mines in this direction are encouraging. The Oklahoma State authorities are fully alive to the conditions, and are endeavoring to control operations so as to benefit the greatest number. The indications are that operators themselves are becoming impressed

with the necessity of using better methods, so as to conserve oil and gas.

To bring about a proper regard for the regulations of the department, to show the earnestness of the office and its intention to compel operators to put forth every effort to prevent waste, I found it necessary to fine several lessees, one of them as high as \$1,000, for failure to comply with the regulations. I believe this action has had a salutary effect.

The force heretofore employed by the office and the Bureau of Mines to inspect oil and gas mining operations has not been sufficient. Development has been so active that it has been impossible for oil men to give proper attention to detail. For instance, where efforts have been made to introduce the use of the mud-fluid system a Bureau of Mines representative would give instructions to the driller as to the procedure and then be called away to look after some important case and not be in a position to see that his instructions were carefully followed. It has happened in cases that his instructions were not followed, and failure to obtain proper results has been charged to the system rather than to the lack of compliance with directions.

The Indian appropriation act for the fiscal year 1915 contains an appropriation of \$25,000, to be expended in the employment of not more than six additional inspectors to supervise oil and gas mining operations on allotted lands leased by members of the Five Civilized Tribes from which the restrictions have not been removed and to conduct investigations with a view to the prevention of waste. We have hopes that with this additional force to supplement the efforts heretofore put forth we may see great improvements in drilling methods during the present fiscal year.

LEASES OF OSAJE OIL AND GAS LANDS.

During the summer of 1913 several very productive wells were brought in on Osage leased lands in the so-called Boston Pool. Adjoining these wells were unleased lands, which, it was concluded, should be offered for lease, both because of prospective active bidding and for the reason that the lands were being drained, and consequently decreasing in value as oil and gas properties.

Accordingly, about 11,000 acres were offered for lease by advertisement and bids opened on September 29, 1913. The bids accepted covered 10,542 acres, with total bonuses of \$505,315.40. This was an average bonus of \$49 per acre. This is the largest bonus ever received for a tract of land of that size in the history of the department's dealings in oil lands.

Outside of the Five Tribes and the Osage Reservation but little has been done on Indian lands in Oklahoma in the oil-mining industry. A few leases have been made, but developments have not been sufficient to indicate whether drilling will be profitable.

DEVELOPMENTS OUTSIDE OF OKLAHOMA.

Hopes are entertained that oil and gas in paying quantities will yet be discovered on the Shoshone Reservation in Wyoming and the Quinaielt Reservation in Washington. Several leases have been

approved covering Quinaielt lands, aggregating about 16,000 acres, and the leasees are active in their preparations to begin work. On account of the very rough character of country and its inaccessibility development work in this section will be extremely expensive.

NATIVE INDUSTRIES.

The Indians on the various reservations derive a considerable income from products of native industries, such as blanket weaving, basketry, pottery, lace making, and beadwork.

NAVAJO BLANKETS.

Undoubtedly the Navajo blanket industry continues to be the most important and remunerative of the native industries in which the Indians are engaged. The Navajo Indians derive from this source about \$700,000 a year. The work is done by the women usually during their spare times. With a view to avoiding the production of large quantities of low-grade blankets, known to the trade as saddle blankets, and to guard against imitations and to satisfy the public of the genuineness of the blankets offered for sale as Indian-made goods and at the same time increase the profits to the Indian workers, a plan has been devised whereby a linen tag and lead seal is being attached to blankets purchased direct from the Navajo Indians as a guaranty of their genuineness. The Indians receive for these blankets \$8 or more in cash or its equivalent. The tagging system is being tried out at Moqui, Western Navajo, and San Juan Reservations, and if it proves successful at those places, the system will be extended to the other Navajo reservations.

In order to assist and encourage these Indians to weave high-grade blankets and to obtain suitable blankets for exhibition at the Panama-Pacific Exposition, authority was granted for the expenditure of \$375 in the purchase of the five best blankets shown at a contest held in conjunction with the San Juan Indian Fair.

This contest was duly held as contemplated. About 700 blankets were displayed from the various Navajo reservations, a number from points 125 miles distant. The first prize (\$100) was won by Mrs. Yabiny Begay Camp, an Indian without education but noted for the extra-fine quality of her blankets. The second prize (\$90) was won by Miss Susie Bainbridge, a former schoolgirl, of Two Gray Hills, N. Mex. The three remaining prizes were limited to Indians under the jurisdiction of the Fort Defiance agency.

The exhibit was considered by competent judges to be the best display of Navajo blankets ever seen in that section of the country, and the keenest interest was shown by the Indians, traders, and visitors. About \$10,000 worth of blankets were sold. Another contest along similar lines will be held in the near future. The Navajo Indians, usually the men, also make large quantities of silverware from Mexican coin.

A large number of Indians on various reservations are more or less extensively engaged in the making of baskets, beadwork, and pottery, from which they derive \$100,000 or more annually.

LACE MAKING.

Lace making is becoming a very important industry in some localities, especially among the Mission Indians in Southern California. This industry not only enables the women and children to utilize their spare time in the home and derive from their labors an income to aid in their support, but the very nature of the work has an elevating and refining influence upon them.

The following circular concerning native industries was issued:

To superintendents and supervisors of Indian schools.

GENTLEMEN: AS you are doubtless aware, the Indians on the various reservations derive a considerable income from the products of native industries, such as blanket weaving, basket, pottery, and lace making, and beadwork, their earnings during the fiscal year 1913 amounting to approximately \$700,000.

I desire very much to do and to have done in the field everything possible to encourage the Indians to improve the products of native industries, so as to make the articles produced very largely of a useful and practical sort, and then to find the best market for disposing of the products to the best advantage for the Indians. To obtain the maximum and best results every employee at the schools or on the reservations must, and is here directed, to take advantage of every opportunity to encourage Indians engaged in native industries to make better articles and aid them to dispose of what they make to the best advantage. Superintendents and field matrons in particular are in excellent positions to accomplish much good along this line.

In order to enable me to determine just what further action is necessary on the part of the office in the improvement and marketing of the products of the Indians, please submit at your earliest convenience answers to the following inquiries, supplemented by such further information as may be available, and your recommendation as to the course you feel it would be proper to pursue:

1. What native industries are the Indians at your jurisdiction now engaged in?
2. Is the work done by the old or the young; by the women or men?
3. Are the Indians engaged in native industries throughout the year or only during spare times or when in special need of funds or supplies?
4. What means are now employed to encourage improvement in the articles made, and are the young Indians to any extent engaging in the native industries?
5. In some localities lace making is becoming an important and profitable industry among Indians, especially the women and children. What, if anything, is being done among your Indians in this respect, and do you think lace making can be satisfactorily developed?
6. If possible, give number of baskets, blankets, pieces of beadwork, amount of lace, etc., made by the Indians at your jurisdiction annually; the number of Indians engaged in the work; the average length of time it takes to make the various articles and their minimum and maximum values.
7. Where do the Indians obtain the material entering into the articles made?
8. Are the local markets ample to handle the products of the Indians, and do the Indians receive the full value thereof? To whom do the Indians sell, and do they receive cash, merchandise, or store credits for their supplies?
9. Do you recommend that the office attempt to find markets in the East for the products of native industries; if so, why; for what class of articles, and what length of time would it take to fill orders for the various articles?
10. Could you furnish samples of the various articles for exhibition to merchants and others interested with fixed prices in quantities as well as for one?
11. Would the Indians consent to send their wares to merchants in the East, through your office, C. O. D. or cash 30 days after delivery?

Please acquaint the employees with my wishes in this matter, answer the questions as fully as possible, and give any further information available which you believe would be useful to the office in arriving at definite conclusions. Your reply should be mailed in time to reach this office not later than August —.

MARKETING NATIVE PRODUCTS.

The conditions under which the Indians must now sell the products of their native industries are very unsatisfactory. In some

places the fineness and real art depicted in the work of the Indians, especially in basketry, is not appreciated, and the result is inferior articles are being produced. Investigations are now being made with the view to ultimately formulating plans to induce the Indians to make the better grade of articles and find for them better markets from which they might realize the true value of their work. These native industries from which the Indians derive so large a sum are recognized to be of great importance, but the problem of bringing about improved conditions is a difficult one, primarily because the Indians usually want their money as soon as they bring in their articles, and this is virtually impossible where the products are disposed of in markets distant from the homes of the Indians.

IRRIGATION.

Under the direct exclusive supervision of this bureau, 62 principal irrigation projects or systems on 56 different reservations or tracts of allotted lands will afford irrigation when completed for the farms of about 30,000 Indians. These projects in their present completed and partially completed state are capable of delivering water to over 368,000 acres of land without additional construction, and will require for completion and providing an adequate supply of water an estimated expenditure of over \$13,000,000. These do not include 40 or 50 minor projects, the large Indian projects in Montana under construction by the United States Reclamation Service under contract with this bureau, nor several other large projects known to exist but for which plans and estimates have not been made.

In my last annual report particular attention was invited to the Indian water-rights situation on a large number of reservations, and the necessity for some provision of law whereby individuals benefiting by construction and maintenance of irrigation systems on Indian reservations, allotments, and lands, should be chargeable with the cost of the work done in their behalf, especially in cases where the cost of the work was reimbursable from tribal funds or where the work in the first instance was done with the expenditure of tribal funds.

This matter was brought to the attention of Congress by this office and provision was made in the appropriation act for 1915, whereby it is hoped that these conditions can be adjusted in a proper manner.

It is also provided in the Indian appropriation act that one of the seven superintendents of irrigation heretofore authorized shall be competent to pass upon water rights, and the general irrigation appropriation was made available for protection of irrigable lands from damage by loss of water rights, under which provision this branch of the irrigation work will receive special attention.

Specific authority of law is also given for the apportionment of the cost of any irrigation project chargeable against tribal funds, in accordance with the benefits received by each individual Indian, as far as practicable, from such project.

These legislative provisions are considered as a marked advance in the policy of the office toward protecting Indians in their water rights and apportioning to individuals the cost of benefits to be derived from expenditures of tribal funds.

The attention of Congress was also invited by the office to the conditions existing on the larger reservations, where water rights seem to be more or less in jeopardy, and provision is made for the submission to Congress of special reports showing the status of the water rights of the Indians and the method of financing the projects and other general information as to the Uintah, Shoshone, Flathead, Blackfeet, and Fort Peck irrigation projects. Active field work in carrying out this provision will be completed in the early part of the fiscal year 1915.

Particular attention is invited to the progress during this fiscal year in respect to relieving somewhat the condition of the Pima Indians and in preparation for an adjudication of the waters of the Gila River. Extended and exhaustive researches are being conducted to have the data necessary to protect the water rights of the Pimas. A great many of the older Indian ditches have been cleaned out and extended to their original length and capacity, new diversion and distributing structures have been installed, and a gratifying increase in the irrigated area is reported.

The work for the benefit of the Mission Indians and others in California has been prosecuted with diligence, and it is believed that, except for some minor projects, the main part of this work will have been completed by the end of the fiscal year 1915.

Among the most important undertakings coming under the irrigation branch of the office is the development of water for domestic and stock purposes on the Navajo Reservation and in the Papago country. On the Navajo Reservation several well-drilling outfits have been employed as the funds available would permit in developing water by drilling and erection of windmills and tanks, with very satisfactory results. This work has materially extended the effective range of the grazing lands, and the number of stock of these Indians has shown a gratifying increase as well.

Similar work is being done in the Papago country, and also surveys have been made to determine the feasibility of small storage projects and to assist the Indians in the construction of dams for stock water and the development of springs, where the necessity appears. Estimates were prepared and included in the Indian appropriation act for 1915 for continuing the work and for the construction of permanent systems at several of the villages, so that the Indians might reside there the year round. About 25,000 Indians will benefit by this underground water development.

The long-standing contention for water rights for the Yakima Indians for irrigation on their reservation in the State of Washington has been settled by legislation as a result of the work of the Joint Congressional Indian Commission. Congress has passed a law by which the Indians are to receive water from the storage reservoir free of charge for 40 acres of each allotment. This settlement, while not fully satisfying all the claims made to water for the Indians, will afford each Indian a water right free of storage charges for the irrigation of a tract of land which will furnish a very good income when properly cultivated. Provision is also made for a report to Congress upon the most feasible and economical plan for a distribution system in connection with the present system, and for reimbursing the Government for any sum it may have expended or may expend for a complete irrigation system on the Yakima Reservation.

During the year the report of the Board of Engineer Officers upon the proposed San Carlos Dam and irrigation project was received, and upon the suggestion of this office an item was included in the Indian appropriation act for sufficient funds for completing the investigation shown in the report as necessary before proceeding with actual construction of the project.

The situation affecting irrigation projects and the interests of the Indians thereunder appears to be greatly improved over the conditions existing a year ago, and with the authority of Congress above referred to for certain changes continued progress is expected.

FORESTRY.

In January of the present year the office began a campaign for the improvement of housing conditions among the Indians. It is the purpose to speedily remedy the deplorable conditions which exist on many reservations and to afford every encouragement to the construction of sanitary homes. The mills at the Klamath and Jicarilla Agencies, which were burned near the close of the fiscal year 1913, have been rebuilt. Several new mills have been purchased and installed, namely, two on Klamath, one on Nett Lake, one on Pine Ridge, one on Flathead, one on Spokane, and one on Mescalero. Extensive repairs have been made to agency mills on Red Lake, Menominee, and Fort Apache. There are now over 40 agency mills in operation and about the same number of private mills located upon Indian lands. On many reservations a new interest in house building has been aroused among the Indians.

The superintendents reported 222 forest fires during the calendar year ending December 31, 1913. The amount of timber damaged was estimated at 3,934,450 feet board measure. The total area burned over was 161,556 acres and the damage to both timber and forage was estimated to be \$34,795.75. Exclusive of the salaries of regular forestry officers, who assist in fighting forest fires in connection with their other duties, the cost of extinguishing fires was \$3,463.92.

Early in September, 1913, about 1,275,000 acres of timberland in the Choctaw Nation, Oklahoma, were offered for sale at public auction. Very general interest was manifested in this sale and 1,535 separate tracts, comprising 306,286 acres, were sold in January, 1914, for \$1,460,244.85. This total was \$162,557.37 in excess of the minimum price which had been placed upon the tracts which were sold. The lands which were not sold consisting of approximately 968,000 acres will be again offered at public auction in November, 1914. At the former sale, agricultural lands were offered in tracts not exceeding 160 acres and no one person or corporation was permitted to purchase more than one quarter section of such lands; all other lands were offered in tracts not exceeding 640 acres. In the sale of November, 1914, all lands will be offered in 160-acre tracts and the limit of 160 acres of agricultural land will be maintained, but no limit will be placed upon the amount of grazing or timber lands which may be acquired by one person, firm, or corporation.

One small sale of timber has been made on the Tulalip Reservation, and about 290,000,000 feet board measure have been offered for sale under sealed bids to be opened August 15, 1914. Minimum prices have been set as follows: Cedar, \$3.50; Douglas fir, white pine, and spruce, \$3; hemlock and white fir, \$.75 per thousand feet board

measure, Scribner rule, with provisions for an advance of stumpage rates at the end of each three years of the contract period of 12 years. This offering includes the major part of the timber remaining on allotments on the Tulalip Reservation.

The 300,000,000 feet board measure on the Fort Apache Reservation which was offered for sale in January, 1912, was reoffered in the autumn of 1913. One bid was received, but no sale was effected.

On December 1, 1913, prices were readjusted under the contracts of the J. S. Stearns Lumber Co. for timber on allotments of the Bad River Reservation. This readjustment will result in a gain of over \$100,000 for the Bad River allottees over what they would have received at the old rates.

Contracts have been approved for the sale of the timber on 154 allotments of minors and full bloods within the White Earth Indian Reservation, Minn. The timber on these allotments was exposed to great fire danger because of being intermingled with lands formerly owned by mixed bloods on which the timber had been or was being cut by private operators through titles acquired under the acts of June 21, 1906 (34 Stat. L., 353), and March 1, 1907 (34 Stat. L., 1034).

Logging operations on the Bad River, Lac Courte Oreilles, Fond du Lac, and Leech Lake Reservations have been continued by the regular contractors. The amount of timber cut on each may be ascertained from the statistical appendix accompanying this report.

The most important single industrial enterprise in the Indian Service is the Menominee Indian mill at Neopit, Wis. On the Menominee Indian Reservation the stumpage is not sold, but the Government manages all phases of lumber manufacture from the time the tree is severed from the stump until it is placed on the car in the form of a finished product ready for the wholesale or retail market. Within the fiscal year 1914 32,520,330 feet of logs were delivered at the mill by the railroad owned by the Indians, 37,270,494 feet of lumber were produced, and 23,179,511 feet were sold. The inventory of June 30, 1914, showed 40,443,793 feet of lumber on hand in the yard, with an appraised value of \$581,581.74.

During the fiscal year 1915 especial attention will be given to the completion of an inventory of the timber resources of the Indians. The knowledge now possessed as to the amount of timber on many large reservations is indefinite and unsatisfactory. The office is confident that a great improvement may be effected in the condition of the Indians through a wise administration of the forests embraced within the reservations occupied by them. The keynote of Indian timber administration from now on will be the industrial development of the Indians and providing the Indians with better home conditions.

SUPPRESSION OF THE LIQUOR TRAFFIC.

Below is an extract from my address at the conference of field supervisors held at Washington February 16, 1914:

I believe that the greatest present menace to the American Indian is whisky. It does more to destroy his constitution and invite the ravages of disease than anything else. It does more to demoralize him as a man, and frequently as a

woman. It does more to make him an easy prey to the unscrupulous than everything else combined. Let us save the American Indian from the curse of whisky.

We have a force of men engaged in the suppression of the liquor traffic. That is their special business. But it is my business and it is your business to do everything we can without injecting ourselves offensively into the work of others or assuming a duty that is not properly ours to create an atmosphere and suggest conditions that will be helpful in this respect, and, above all, to be a personal object lesson inviting the Indian to banish liquor rather than to be guilty of anything that may cause him to look upon one of us as a justification for doing that which leads him to the destruction caused by the use of whisky.

There is nothing that could induce me, since I have taken the oath of office as Commissioner of Indian Affairs, to touch a single drop of any sort of intoxicating liquor, and this regardless of my attitude on the prohibition question.

As a matter of good faith to our treaty relationships, to legislative enactments, to the Congress which appropriates \$100,000 a year for the suppression of the liquor traffic among the Indians, we should do everything reasonably within our power to justify this appropriation and insure the best results obtainable. This accomplished, we have laid a substantial foundation for all of our work in solving the Indian problem and made a long step forward looking toward their equipment for the responsibilities of citizenship.

That these ideas should receive the careful consideration of all the employees of the service and imbue them with a realization of the tremendous importance of this work, I addressed a personal letter to every employee of the Indian Service, containing the above quotation from my address to the field supervisors.

The same letter was also sent to many persons whom I knew or thought to be interested in the uplift and advancement of the Indians. It is a pleasure to acknowledge the nation-wide expressions of strong approval and offers of cooperation. This letter was also sent to many leading Indians of the various reservations and has brought numerous promises of hearty cooperation and active assistance. The 6th day of April was set aside on which this letter was directed to be read to the student body of every Indian school, including those under Government, mission, or private supervision, when many of the schools adopted resolutions of earnest commendation.

In many instances we have found where the Indian leased his lands that the lessees introduced liquor thereon in the belief that there was no law prohibiting same. In order to give such parties proper notice and warning and to afford the Indian greater protection, a formal notice was printed, calling attention to the law and instructions issued to the superintendents requiring that it should be attached to all printed leases covering Indian lands.

It was found that the Indians were purchasing lemon and vanilla extracts and Jamaica ginger in lieu of whisky. In some localities these liquids have been the principal source of the Indians' supply of intoxicants. Several cases are now pending in the Federal court on the charge of selling these extracts to Indians.

Along the same line we have found that the Indian has been tempted through advertisements to purchase "concentrated extracts" whereby they can make their own liquors, and prompt action was taken to procure an indictment, which is now pending. Not only have the Indians been tempted by liquor and extracts, but it has been brought to our attention that he has sometimes been furnished with cocaine, yenshee, and opium, and that in certain sections of the country he purchases proprietary medicines which are said to contain a large per cent of alcohol.

Our efforts to suppress the use of peyote or mescal among the Indians have been carried on under difficulties, but we universally endeavor to show the Indian that this article contains properties which are detrimental to his welfare and should not be used.

There are a few localities in which we have no trouble on account of the Indians procuring liquor, but generally speaking we have the greatest difficulty in satisfactorily handling this situation.

It is very gratifying that we have been successful in convicting some of the most prominent bootleggers who have engaged in the liquor business on a large scale.

To successfully cope with the shrewdness, trickery, and persistence of the bootlegger requires character, judgment, tact, and ability, and I have accordingly in every way endeavored to raise the standard and efficiency of our liquor suppression officers, including the increasing of the salaries of those regularly employed in this work. Furthermore, all new men are now employed temporarily, that they may first demonstrate their fitness for this difficult and important work, which practice is proving very satisfactory.

The use of decoys has developed the usual comment, but considering all the conditions, the decoy judiciously used seems fully justified.

On December 31 I attended a conference of the special officers held at Denver. It was the first time in the history of the liquor service that a Commissioner of Indian Affairs had attended such a gathering. The opportunity of meeting with the men engaged in this work and of earnestly presenting my views has well repaid me for the time and effort involved. The officers have since entered into their labors with renewed energy, and taking into consideration the various ramifications and legal questions involved are securing splendid results.

I am glad to say that during the past year conditions have greatly improved in Oklahoma. In my last annual report I stated that every step was being contested in the courts, and this fact is further borne out by the work during the past year. Actions were brought to compel the railroads endeavoring to cooperate with us to accept liquor for shipment into certain portions of the State; a restraining order was asked for and a suit for damages filed against the United States marshal, the chief special officer, and deputies. Many cases were filed and appealed involving other phases of the traffic, hoping to bring about unfavorable decisions.

Probably the most important case involving the liquor suppression work in Oklahoma is now pending in the Federal court. An indictment was returned involving 30 defendants on a charge of conspiracy to violate the laws of the United States with reference to the shipment of liquor into the eastern district of Oklahoma. Should the Government be successful in this case it is believed that the backbone of the "bootlegging trust" will have been broken.

I can not refrain from making special mention of the aggressive and efficient prosecution of violators of the liquor laws by the United States attorneys and marshals of Oklahoma.

Most of our work in Minnesota has been under the provisions of the laws of the State, because of the decision of the Supreme Court in matter of *Ileff* (197 U. S., 488), and the fact that the majority of the Indians are citizens. The famous Bemidji liquor case was decided by the Supreme Court of the United States on June 8

favorable to the contention of the Government, but on June 22 the appellees were granted 60 days to file a petition for a rehearing which has effected a temporary stay of the enforcement of the judgment of the court. This is an important decision, and if finally sustained will certainly result in great improvement of conditions.

We have been actively engaged in suppressing the traffic in intoxicants in South Dakota to protect the Sioux Indians and good results have followed. Our work was materially aided by the decision of the Supreme Court in the case of *United States v. Sam Perrin*, the court upholding the validity of the liquor provision in the act of August 15, 1894, which ratified the agreement with the Yankton Indians.

Operations among the Pueblos in New Mexico assumed an active state by reason of the decision of the Supreme Court of the United States on October 20, 1913 (231 U. S., 28), reversing the judgment of the United States District Court in the case of *United States v. Sandoval* (198 Fed., 539), with directions to overrule the demurrer to the indictment and to proceed with the disposition of the case in regular course. The court outlined the powers of Congress in dealing with a dependent people, confirming prior decisions on this subject, and holding that although these Indians have a fee-simple title to their lands, it is a communal title, no individual owning any separate tract, and that, considering the reasons which underlie the authority of Congress to prohibit the introduction of liquor into the Indian country, it seems plain that this authority is sufficiently comprehensive to enable Congress to apply the prohibition to the lands of the Pueblos.

The question of citizenship was left open, the court saying that citizenship is not in itself an obstacle to the exercise by Congress of its powers to enact laws for the benefit and protection of tribal Indians as a dependent people.

Our work in Montana has developed some resentment and numerous obstacles, but we are accomplishing much good and shall increase our activities there.

Considerable work was undertaken during the year to protect the Indians residing in the State of New York from intoxicants. An officer has been thereabouts for several months. Whether these Indians come within the classes enumerated within the general liquor law is an important question and is now pending in a case before the Attorney General.

Conditions in other States inhabited by Indians have considerably improved in some instances and have remained about the same in others. The cooperation of State and Federal authorities in the trial and punishment of offenders is as essential in this work as special officers are to detect them. Likewise it is essential that we have both the moral and active support of the citizens residing in Indian communities, and I am pleased to say that as a result of the manner of our activities and the sentiment which has recently been aroused the evil results of the liquor traffic among the Indian is fast becoming a matter of grave concern to white citizens of the country, both for the reason that they are properly interested in the uplift of the red man and for the further reason that impoverishment of the Indian means that he will ultimately become a charge upon the taxpayers of the several States.

The results of our labors show that during the past fiscal year we were successful in bringing about 1,823 arrests and 941 convictions; 247,592 pints of liquor were seized and destroyed under the provisions of section 2140 of the Revised Statutes.

Our operations to protect the Indians from intoxicants extends from Florida to New York in the East, from Washington to California in the West, and from the Atlantic to the Pacific Oceans. In this work we endeavor to look after the welfare of over 300,000 Indians scattered through more than 20 States of the Union. Many complaints are received during the course of the year, which, by reason of the inadequacy of the liquor suppression force, due to the limited appropriation, can not be reached at all.

The appropriation for this work, which is now \$100,000, should be materially increased that we may be better enabled to protect the Indians from irreparable injury by taking prompt action on dependable information constantly presented showing widespread, gross, and continuous violations of the Federal and State laws on this subject.

* * * * *

FIVE CIVILIZED TRIBES.

The Five Civilized Tribes comprise the Cherokee, Choctaw, Chickasaw, Creek, and Seminole Tribes of Indians in Oklahoma. Their original domain was formerly known as Indian Territory, and before the allotment of their lands included an area of 19,525,966 acres. Their total number of enrolled members and freedmen is 101,209.

The enrollment and original area of these tribes are shown by the following table:

Tribe.	Number enrolled.	Area.
		<i>Acres.</i>
Cherokee.....	41,693	4,420,068.00
Choctaw.....	26,730	6,953,048.07
Chickasaw.....	10,955	4,707,904.28
Creek.....	18,712	3,079,094.00
Seminole.....	3,119	365,852.00

Of the foregoing the freedmen in the several tribes number as follows:

Cherokee	4,916
Choctaw.....	5,994
Chickasaw.....	2,473
Creek.....	6,807
Seminole.....	986

DISPOSITION OF TRIBAL AFFAIRS.

Of the total area embraced within the Five Civilized Tribes there were allotted to members 15,794,400 acres. Of the surplus there was sold at public auction under the act of Congress of April 28, 1906, 2,178,174 acres for a consideration of \$12,189,193. There has been offered for sale 1,274,024 acres of Choctaw and Chickasaw timberlands, of which 306,286 acres were sold for \$1,460,244.85. There

remains to be sold in the Choctaw and Chickasaw Nations about one and one-half million acres, of which one-half million is segregated coal and asphalt lands, the surface of which only will be sold, and 968,640 acres of timberlands. There have been collected royalties on coal productions since 1899 \$3,615,594.16.

Under the act of March 3, 1911, authorizing the deposit of receipts upon the sales of surplus and unallotted lands in national or State banks in the State of Oklahoma there have been deposited in 249 banks located in 69 counties in Oklahoma the sum of \$5,083,988.82. These deposits draw interest bearing from 4 to 6 per cent. The deposits are secured by surety company bonds. There have been derived from the sale of town lots \$4,535,243.57. The total revenue collected and deposited to the credit of the Five Tribes from July 1, 1898, to June 30, 1914, was \$17,099,826, and there is yet due and unpaid, for lands which have been sold, \$5,623,950, which sum is drawing 6 per cent interest.

The tribal form of government of the Cherokee Tribe was practically abolished at the close of the fiscal year June 30, 1914, all tribal officers having tendered their resignations to be effective as of that date. The resignations of all were accepted except that of the governor, whose temporary continuance in office will be required to assist in the disposal of the few remaining details incident to the complete dissolution of the tribal government.

Pursuant to previous acts of Congress applicable to all of the tribes, the Choctaw, Chickasaw, and Seminole Tribes have been deprived of their legislative and judicial functions, retaining only a corps of executive officers for the transaction of business matters.

In the Creek Nation the only work of importance looking to the ultimate disposition of tribal affairs is the equalization of Creek allotments. Preparations have already been made for this work in anticipation of congressional authority for the equalization of such allotments on basis of \$800.

Preparations have also been made in the Cherokee Nation, in anticipation of congressional legislation, for the distribution of the remaining funds still held in common to the credit of the tribe. It is expected that after deducting all necessary charges this payment will amount to about \$12 per capita. It is also probable that a per capita payment of \$100 to the Chickasaws will be authorized.

In the Seminole Nation there remain about \$1,800,000 of tribal moneys to be individualized before the tribal affairs can be entirely finished.

After the sale in the Choctaw and Chickasaw tribes of the timber lands and the surface of the segregated coal and asphalt lands, which will be accomplished in the main within the next six months if present plans are carried out, the chief property of a tribal nature in which these tribes will be interested will be the mineral deposits and the common funds held in trust by the United States, estimated to be in value and amount between twenty and thirty millions of dollars.

* * * * *

NEW YORK INDIANS.

The Indian situation in New York is one of the most peculiar problems with which this office has to deal. Shortly after assuming

duties as Commissioner of Indian Affairs instructions were given that a thorough and exhaustive study of the entire situation be made, with a view ultimately of working out some feasible solution of the present anomolous condition.

In the seventeenth century jurisdiction over certain territory now in the western part of the State of New York was claimed both by the Plymouth Colony and the Duke of York under conflicting grants made by the Crown of England. Antedating the Federal Constitution the two colonies (Massachusetts and New York) by convention settled the points in dispute. By this agreement New York ceded to Massachusetts the right of preemption of the soil from the native Indians, and all other right, title, and property in and to these lands, the right of government, sovereignty, and jurisdiction being excepted.

In March, 1791, Massachusetts sold its right and title to these lands to Robert Morris, and by several mesne conveyances the Ogden Land Co. acquired a claim of title to all the lands embraced in the Cattaraugus and Allegany Reservations and a part of those in the Tuscarora Reserve. The locus of the fee in and to these lands is an interesting question. The Ogden Land Co. claims a fee through the sale to Robert Morris by the Massachusetts Colony. The Indians claim the fee, advancing the argument that the only thing Massachusetts had the power to sell was the preemption right of first purchase whenever the Indians get ready to part with it. New York has always claimed jurisdiction on the ground that this was retained in the convention with Massachusetts in the eighteenth century. The Seneca Nation or Tribe was incorporated under the laws of the State of New York in 1845 (sec. 1, chap. 150), and individual members of the tribe hold deeds to certain tracts within their reservation, which deeds have been placed of record in the proper county. Sales of individual tracts to white persons, however, is prohibited. These facts have tended to further complicate the situation.

In 1904 a bill was pending (H. R. 7262, 58th Cong.) designed to allot in severalty the lands claimed by these Indians, and the question was quite extensively agitated at that time. The legislation failed of enactment, however, and I am now giving the question careful consideration with a view of submitting an appropriate draft of legislation to the Congress at an early date providing for a division of the tribal lands and the placing of these Indians on a basis of citizenship equal to other residents of the State—a place which they should have occupied long ago.

FORT SILL APACHE PRISONERS OF WAR.

The remnant of Geronimo's band of Apaches, with the children born to the members since their capture 20 years ago, were held in a nominal status as prisoners of war, and of late years have been located at Fort Sill, Okla.

The last of this band was released from the jurisdiction of the War Department in March, 1914. All adult Indians among those who elected to remain in Oklahoma, instead of going to the Mescalero Reservation in New Mexico, as 187 members of the band elected to do during the fiscal year 1913, have been allotted suitable tracts of land which were purchased for them.

All reports concerning the part of the band remaining in Oklahoma are to the effect that they are now reasonably comfortably situated and bid fair to become industrious, self-supporting Indians.

The part of the band who removed to the Mescalero Reservation in New Mexico have possibly not made so much advancement, but these Indians have been placed in a position to commence farming, and have been reported as fairly comfortable and satisfied during the year.

The further work of reestablishment of these Indians is being made the subject of special attention.

PURCHASE DIVISION.

Goods and supplies to the amount, approximately, of \$3,500,000 were purchased for the service during the fiscal year just closed and delivered at a cost for transportation of about \$264,021.66, exclusive of wagon transportation from the terminals of railroads and boat landings, which service amounted to \$168,139.70. The cost of inspection was \$6,862.47. These amounts indicate service actually paid for to date. They will be increased by liabilities incurred during the last three months of the fiscal year which have not been placed on our liability ledgers. The high cost of supplies has had its effect on the prices paid in numerous lines during the year, particularly in the purchase of beef, both net and gross.

In addition to such supplies as the superintendents bought direct other purchases were made for them through the several Indian warehouses, all of which, except emergency purchases from Indians or patented articles, were made after proper advertisement, as required by law. These purchases were authorized only after the bids secured by the officer had been presented to this office and checked, freight figured when necessary, and the most advantageous quotation accepted, price and quality considered.

The service has not received quite all the benefit hoped for from its policy of economy in purchasing, as oftentimes what was saved in original cost was offset by delay in delivery. The necessity for more expeditious execution of field officers' requests is realized and steps have been taken to modify the existing plan so as to effect quicker deliveries. As the idea is developed during the coming year greater efficiency in purchasing will result.

Short cuts to quick results have been adopted, both in the office and field, and believing that concentrated effort will materially improve our system a new division, designated "purchase," has been created, which will handle exclusively the purchase and transportation of supplies.

The Indian appropriation act for the current fiscal year will provide for three permanent warehouses instead of five, as heretofore, which will effect a material saving. During the active shipping season temporary receiving and shipping depots will be established at points found to be necessary.

In effecting these economies we have not lost sight of quality. The old idea that anything was good enough for the Indians has been driven to the rear, as those having dealings with the office now realize, and the Indian Service to-day is no longer the depository

for such supplies as dealers otherwise could not dispose of. High-grade stock cattle, standard agricultural implements, good substantial foodstuffs, and good grades in other lines are bought for the Indians. Under the reimbursable plan, where an individual Indian must pay ultimately in cash for such articles as may be bought for him, he has been permitted largely to make his own selection, provided, of course, it was reasonable and the articles of standard quality.

Where it has been considered advisable to do so the commercial standing of successful bidders has been investigated before contracts were awarded, and in order that those with whom we have business dealings might be brought into a clearer relationship with the service, each contractor personally has had his attention called to the fact that his contractual obligations must be fulfilled to the very letter and that no deviation therefrom will be tolerated. Inspectors of goods and supplies will be required to exercise the utmost care in passing on deliveries to see that inferior articles are not accepted. In the inspection of such supplies as would come within their scope of work, we have been materially assisted by the Bureau of Standards, the Bureau of Mines, and the Bureau of Animal Industry.

In the latter part of the fiscal year bids were opened and contracts awarded at San Francisco for the Pacific coast schools and agencies, this being the first opening there since the spring of 1910.

For the purpose of increasing competition in connection with our woolen piece goods and clothing contracts, the Bureau of Standards, at our suggestion, drew up new specifications therefor, under which, during the latter part of the fiscal year just closed, clothing was purchased for the fiscal year 1915.

Realizing daily the serious handicap imposed by certain statutes governing the purchase of supplies, remedial legislation has been prepared to afford relief in that direction and place our purchasing on a more business-like plane. This legislation we hope to have considered during the next session of Congress, and, should it pass, our purchasing will be done with less circumlocution and greater efficiency.

It is my purpose to continue to inaugurate improvements in the purchasing system of the Indian Service until it is placed on a sound, economical, efficient, and business-like basis.

SALES OF INDIAN LANDS.

The sale of allotted and inherited Indian land is provided for by the acts of Congress approved May 27, 1902 (32 Stat. L., 245), March 1, 1907 (34 Stat. L., 1015), May 29, 1908 (35 Stat. L., 444), June 25, 1910 (36 Stat. L., 855), and February 14, 1913 (37 Stat. L., 678). The last-mentioned act extended the provisions of the act of June 25, 1910, to Oklahoma, with the exception of lands belonging to the Five Civilized Tribes and the Osages; so that since the passage of this act patents in fee simple can be issued to the purchasers of Indian land in Oklahoma, with the above exceptions.

During the fiscal year 1917 sales have been made involving 90,768.30 acres, consideration \$1,652,815.50. The average price for which the land was sold is a little over \$17 per acre. The year previous this office sold 317 tracts of land, involving 31,576.74 acres, for a consideration of \$692,413.28.

The sale of land in 1912 and 1913 was seriously affected by reason of the drought that prevailed in the Indian country, but during the past fiscal year there has been more demand for Indian land.

New rules now in effect in this office enable the prompt handling of all sale cases, and soon after the papers reach the office the purchaser is placed in possession of the land and the money made available for the use of the Indian owner.

* * * * *

The funds are derived principally from (1) sale of allotted and inherited lands, (2) lease accruals, (3) sale of timber, (4) oil and gas royalties, and (5) earnings of outing pupils. The amount of deposits of this character in bonded depositaries on June 30, 1914, was approximately \$13,000,000.

Realizing the vital importance of the Indian procuring his money when he needs it, and that plans made by the superintendent for him should not be allowed to become impracticable through delay in obtaining the funds with which to carry them out, the method of handling the requests for these expenditures has been changed completely, and all such requests now receive prompt consideration, with the result that requests which formerly required a month or longer to receive administrative action are now returned to the field the day following their receipt in the office.

Special attention has been given to the conservation of minors' funds, and authorities have been largely restricted to expenditures which were in the nature of investments.

* * * * *

INDIANS FOR EXHIBITION.

The office is frequently in receipt of requests to grant permission for the use of Indians from various reservations for exhibition purposes.

I am opposed to this kind of employment and feel that every means should be utilized to urge Indians against such methods of livelihood. It is the policy of the office to persuade Indians to erect permanent and substantial homes on their allotments for themselves and their families, to cultivate their lands, to surround themselves with live stock, and to become thrifty farmers. I can conceive of no line of employment for a people by nature of a roving tendency more inconsistent with the Government's general policy of training Indians to become self-supporting citizens than to permit them to travel around the country with so-called wild-west shows, exhibiting themselves and their families in the costumes of savagery, presenting barbaric episodes of the past which might better be forgotten.

The wages earned in such employment are small and can not be used to justify the risk, even with the best of supervision, which comes to the ordinary Indian in the traveling life under the conditions surrounding the average show, from contact with liquor and with an element having no interest whatsoever in his moral or industrial advancement.

At the present time a few Indians are employed with shows under supervision. I feel, however, that I should endeavor to do away with the white man's commercialization of the Indian for exhibition

purposes as rapidly as is consistent with the fact that Indians have been permitted to engage in such employment for many years and can not easily be brought back to an appreciation of the benefits of a different mode of life.

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LEGISLATION.

The Indian appropriation act for the fiscal year 1915 was not approved until August 1, 1914. Therefore it became necessary for the appropriation act of the previous year to be extended, which was done by joint resolutions of June 30 and July 16, 1914.

For the fiscal year 1910 the Indian appropriation act carried about \$11,800,000; the act of 1911 appropriated about \$9,200,000; act of 1912, \$8,800,000; act of 1913, \$8,900,000; and for 1914, \$9,600,000; and for the fiscal year 1915 there was appropriated \$9,771,902.76.

The Indian Committees of Congress, with the cooperation of this bureau, have in the Indian appropriation act for 1915 worked out constructive legislation for the Indians of the country along progressive lines.

There has been appropriated a large amount of money for improving the health conditions of the Indians and providing hospital facilities for them. Three hundred thousand dollars was appropriated for this purpose, \$100,000 of which will be used for constructing hospitals, to cost not to exceed \$15,000 each. In addition to this the Indian Bureau is now constructing three hospitals for the Sioux Indians, to cost approximately \$25,000 each, on the Rosebud, Pine Ridge, and Cheyenne Reservations. An appropriation was also made in the Indian bill for hospitals in the Chippewa country in Minnesota, and \$50,000 appropriated therefor out of the Chippewa Indian funds. The health conditions of the Indians have been found to be deplorable, and little effective work has heretofore been done to correct this condition. The appropriation in question will be a long step forward in solving this important problem.

The appropriation for educational purposes for the Indians is considerably increased, and special provision is made for the education of deaf, dumb, and blind Indian children who have not been heretofore provided for. There is also a specific appropriation for educational purposes among the Papago and Navajo Indians. These Indians have heretofore been neglected and several thousand Papago and Navajo Indian children are without school facilities.

Upon the recommendation of this office large reimbursable appropriations have been provided in the Indian appropriation act for industrial work among Indians. These reimbursable appropriations amount to \$725,000. The Indians have heretofore been allotted land, but they have not been provided with tools and general farming equipment. This appropriation will enable the Commissioner of Indian Affairs to improve stock conditions and place herds of cattle on a number of Indian reservations. It is expected that this appropriation will aid very materially in promoting the industrial activities of the Indians of the country and go far toward developing them into self-supporting and progressive citizens.

The current Indian appropriation act carries a proviso which requires that detailed information regarding each Indian irrigation

project be furnished Congress at its next session. There is also a provision of law in the Indian appropriation act which will authorize the office to equalize the irrigation construction charges and apportion said charges according to the benefits received. This is new legislation, which was obtained on the recommendation of this office. The Indian irrigation projects have heretofore been appropriated for and constructed largely without adequate detailed information, and it is expected at the next session of Congress that the Indian Office will furnish a complete statement regarding each of these projects, so that Congress may have a thorough understanding of conditions on each of the reservations where irrigation projects are being constructed. It is also expected that the information obtained from these reports will result in procuring administrative and legislative action which will protect more securely the water rights of the Indians of the country.

There is included in the Indian bill an appropriation to cover salaries and expenses of probate attorneys who are engaged in working out probate reforms for the more certain protection of the property of Indian children in Oklahoma, which work is being done in harmony with rules of probate procedure adopted at a conference of the county judges of eastern Oklahoma, and recently adopted and promulgated by the justices of the Supreme Court of Oklahoma.

The Indian bill also carries \$100,000 to support a widespread and aggressive campaign for the suppression of the liquor traffic among Indians.

The bill also provides for six confidential inspectors. It is expected that this appropriation will result in thorough investigations being made on Indian reservations, and throughout the Indian country generally, so that the office may be advised of the actual conditions, to be used as a basis for effective reforms.

The bill provides for the consolidation of the offices of the Five Civilized Tribes and Union Agency, effective September 1, 1914.

The controversy regarding the enrollment of the Mississippi Choctaws was compromised by omitting the Choctaws of Oklahoma from the per capita payment made to Chickasaw and Cherokee Indians of \$100 and \$15, respectively.

The long contest regarding the water rights of the Yakima Indians was finally settled by giving these Indians a free water right to 40 acres of their allotments in perpetuity.

Another question which has been in dispute for a number of years was settled by the provision in the Indian bill providing for allotting the remaining unallotted Indians on the Bad River Reservation and the distribution of the proceeds of the sale of the remaining tribal timber to the Indians in question.

There is appropriated out of the funds of the Confederate Bands of Utes, in Utah and Colorado, about \$800,000; \$100,000 for the purchase of stock for the Navajo Springs Band of Indians in Colorado; \$200,000 for the Uintah, White River, and Uncompahgre Bands in Utah; and the balance to be expended among all of said Indians for the promotion of civilization and self-support among them, one of the chief purposes of which is to protect the water rights of the Ute Indians from being forfeited within the period fixed by law, and all of which is to give them much needed help in industrial progress.

There was appropriated \$100,000 for determining the heirs of deceased Indian allottees, so that the title to inherited Indian lands may be definitely determined.

The foregoing refer to the more important problems handled by this bureau during the past fiscal year. I have necessarily omitted from this report a reference to many minor activities of the Indian Service.

Very truly, yours,

CATO SELLS, *Commissioner.*

The SECRETARY OF THE INTERIOR.

REPORT OF THE COMMISSIONER OF THE GENERAL LAND OFFICE.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, September 15, 1914.

SIR: I have the honor to submit herewith a report of the transactions relative to the disposition of the public lands in this office during the fiscal year ended June 30, 1914, together with a few recommendations for additional legislation.

AREA OF LANDS ENTERED AND PATENTED.

The total area of public and Indian lands originally entered and allowed during the fiscal year ended June 30, 1914, is 16,522,852.12 acres, an increase of 655,629.67 acres as compared with the area entered during the year 1913.

The area patented during the fiscal year is 14,391,071 acres, an increase of 1,712,995 as compared with the fiscal year 1913. Of the above area, 10,000,635 acres were patented under the homestead law, an increase of 2,680,577, not including homesteads, 22,129, patented as soldiers' additional entries.

The decrease in receipts and increase in area disposed of is caused by the decreased number of homestead entries commuted to cash, and the increased number on which proof was made under the three-year act of June 6, 1912. The area patented under this act in 1913 was 3,500,388 acres as against 6,645,046 in 1914, an increase of 3,144,658, or nearly double.

CASH RECEIPTS AND EXPENDITURES.

The total cash receipts from the sales of public land, including fees and commissions on both original and final entries, and sales of old Government property in the local offices, for the fiscal year 1914, were \$4,256,102.96 (1913, \$4,287,540.67), a decrease of \$31,437.71. Miscellaneous receipts were as follows: From sales of Indian lands, \$1,844,802.77 (1913, \$2,118,469.34); depredations on public lands, \$21,913.85; leases, power sites, etc., act of February 15, 1901, \$2,681.28; copies of records, plats, etc., made at General Land Office, \$17,180.66, and at 13 surveyors general's offices, \$5,686.11; making the aggregate cash receipts of this bureau during the fiscal year 1914,

\$6,148,367.63 (1913, \$6,955,504.81), a decrease of \$807,137.18. This decrease is caused partly by the fact that the reclamation water-right charges are now collected by the fiscal agents of the Reclamation Bureau, also by the fact that the sales of Indian lands were less, and by the decrease in commutation homestead entries.

The total expenses of district land offices for salaries and commissions of registers and receivers, and incidental expenses during the fiscal year ended June 30, 1914, were \$853,698.60, a decrease of \$36,775.46. The aggregate expenditures and estimated liabilities of the public-land service, including expenses of district land offices and surveys were \$3,028,187.32, leaving a net surplus of \$3,120,180.31 of receipts over expenditures.

THE FIELD SERVICE.

On June 23, 1913, Congress appropriated the sum of \$500,000 for the "Protection of public lands, timber, etc." for the fiscal year ending June 30, 1914.

The average number of special agents employed per month under this appropriation during the fiscal year was 119. From this appropriation were also paid the salaries of the clerks to the chiefs of field division and the necessary temporary employees in this office to handle properly the work incident to the large number of reports being received from the field.

The total amount of cash collected and turned into the Treasury as a result of the work of the special agents in the field during the fiscal year is \$277,835.94. Of this total amount collected, \$25,536.56 was accepted as settlement for timber trespass, \$19,674.19 was received from timber sales, and \$232,625.19 was recovered by civil and criminal actions brought through the Department of Justice in cases of timber trespass and fines imposed and paid in cases of conspiracy, perjury, etc., and also in settlement of civil suits to vacate patents.

As a result of investigation, 516,298.51 acres have been restored to the public domain. Of this total amount restored 292,000 acres constitute the area of fraudulent entries (taking an average of 160 acres to each entry) canceled on special agents' reports; 197,364 acres were restored to open range on abatement of unlawful inclosures; and 26,934.51 acres were restored through suits to cancel patents fraudulently acquired, brought by the Department of Justice, on the recommendation of this office based on special agent's reports.

Special agents have personally examined and reported on 22,851 entries, of which 7,070 reports were adverse and 15,781 were favorable. In addition to the reports of special agents 220 adverse and 783 favorable reports have been received from forest officers on entries within national forests. Reports on applications for rights of way over the public domain for reservoirs, canals, ditches, etc., were rendered on 108 such applications, of which 58 were adverse and 50 were favorable. Reports have been received on 18 segregation lists under the Carey Act, on which final action has not yet been had.

Two civil suits were recommended for the setting aside of grants of rights of way over the public domain for reservoirs, canals, ditches, etc. Investigations are now in progress involving all such grants

heretofore approved for such purposes, with a view of bringing civil action against all grantees where the evidence shows misuse, non-construction, or abandonment of such privileges.

During the year 108 civil suits were recommended; 160 civil suits have been won, and 92 have been lost. Of the civil suits on which decisions were rendered 45 timber trespass cases, involving \$189,610.89 were won, and 21 were lost; 81 suits to vacate patents were won, resulting in the restoration of 26,934.51 acres to the public domain and cash payments of \$40,614.30, and 66 were lost; 27 cases of unlawful inclosure were won, resulting in the restoration of 41,913 acres heretofore held under fence unlawfully, and 3 were lost; and 7 cases were won to declare judicial forfeiture of rights of way, and 2 were lost.

At the close of the fiscal year 278 cases wherein criminal prosecution was recommended were pending before the Department of Justice.

The criminal cases closed during the year resulted in a total of 26 convictions, including 7 prison sentences, as follows: Eight convictions for timber trespass, fines of \$1,610 were assessed by the court, and \$1,500 paid; 7 convictions for conspiracy and fine of \$500 paid; 4 convictions of unlawful inclosure of the public lands, fines of \$400 imposed and paid; 3 convictions in cases of using the mails to defraud, 3 prison sentences and fines of \$1,000 imposed; 2 convictions under section 19 of the Penal Code, prison sentence and fines of \$200 imposed; 1 conviction for securing fraudulent entry, prison sentence and fine of \$5 imposed; 1 conviction for making false acknowledgments of certificates, prison sentence imposed.

The work of investigating the lands in California withdrawn as oil has reached such a stage that it is anticipated that during the next fiscal year definite results will be accomplished and this very complex situation will be well in hand. The force in that field has been considerably increased, so as to be better able to expedite action on these cases. In this work this office has been aided by the cooperation of the Geological Survey and the Bureau of Mines. Special mention should also be made of the splendid cooperation given by the Department of Justice in the prosecution of cases in court involving lands in this withdrawn area.

There has been a change in the policy regarding the holding of hearings involving Alaska coal-land claims. Previously the plan followed was to defer such hearings as involved those claims which were embraced in criminal proceedings, so as not to embarrass the prosecution of the criminal cases. However, in order to expedite the determination of the title to these coal claims, it was deemed advisable to prosecute to a conclusion the hearings, and it is expected that by the end of October all the pending hearings on these cases will be completed.

The field force has reached a state of high efficiency, and the value of the trained men is amply demonstrated by a comparison of the work done during this year, under an appropriation of \$500,000, with that done during the fiscal year 1910, under an appropriation of \$1,000,000. In 1910, with a field force averaging 216 men, 22,077 cases were investigated in the field and reported on. In 1913, with a field force averaging 119 men, 22,851 cases were investigated in the field and reported on.

The field force exists not only for the purpose of preventing and checking violations of the public-land laws and attempts fraudulently to acquire the public domain, but also for the purpose of aiding and helping the honest settler who in good faith is trying to meet the requirements of the law and to establish a home for himself and his family.

By far the greatest benefit arising from the operations of the field service is not the mere matter of indictments or damages or the restoration of lands to the Government, but rather the progress in a just and honest enforcement and administration of the public-land laws to the end that the benefits and advantages to be derived from the Nation's great natural resources shall be enjoyed in the manner and by the persons entitled thereto as contemplated by the laws.

PUBLIC SURVEYS.

Much attention has been given during the past fiscal year to the matter of public land surveys in all its branches—field work, note writing, preparation of plats in the offices of surveyors general, and examination and approval thereof in this office. I think I am safe in saying that the efficiency of the direct system for field work has now been demonstrated beyond a doubt. During the field season of 1913, that is, the latter portion of the fiscal year 1913 and the first half of the fiscal year 1914, the field work for over 17,000,000 acres of surveys and resurveys was performed at a total cost for such field work of less than 4 cents per acre, including Alaska. This includes the cost of iron posts with cement core and brass cap bearing the description of the corners marked thereby. A saving of between \$5,000 and \$6,000 in the cost of these posts was effected this year. The actual cost in money for field work under the direct system does not exceed and is probably materially less than the cost under the contract system, including cost of examination under the latter; the work is done in the field in a more thorough, systematic, and permanent manner, making subsequent examination in the field ordinarily unnecessary, and the continual disputes and controversies over the matter of satisfactory performance of contracts or the price to be paid are wholly eliminated.

During the past year the method of payment and subsistence of surveyors in the field has been readjusted. Under the law, surveyors are allowed not to exceed \$3 per diem in lieu of subsistence. I found that under the system as it existed in the early part of the fiscal year 1913, a graded system of payments in lieu of subsistence was in operation. For instance, in a surveying camp, some of the higher-priced men would be receiving \$3 per day in lieu of subsistence, others \$2 per day, and still others \$1 per day, while all were subsisted exactly alike out of the same mess. The stores used were purchased with Government funds, and then at the end of the month the actual cost of subsistence was deducted from the amount to be paid each man in lieu of subsistence. Some of the employees, therefore, received in lieu of subsistence just about the cost of their subsistence, whereas others received considerably more in lieu of subsistence than the actual cost thereof, which of course operated as additional compensation for work performed, and was so considered and salaries fixed

accordingly. The Comptroller of the Treasury held, and doubtless properly, that this plan of operation was not within the law. As we were then in the midst of a surveying season, a makeshift plan, since abandoned, was adopted until the close of the surveying season of 1913. During the past winter a thorough study of the situation was made, whereupon a new plan was adopted whereby the salaries of surveyors were readjusted on a basis of what their services were considered to be actually worth, without regard to any additional payment by means of payment in lieu of subsistence, and payment in lieu of subsistence, while the men are engaged in field work and subsisted in field camps, was abolished, the men being subsisted out of the Government stores at Government expense. This cost averages in the neighborhood of 85 cents per day per man. Payment in lieu of subsistence is still continued for those few surveyors and supervisors who are not subsisted in such camps. The new plan is more satisfactory to the men, I believe will be more economical for the Government, and is strictly within the comptroller's construction of the law.

Diligent study and effort has been made with a view of reducing the great delay that has heretofore existed, and still exists to a considerable extent, between the date of receipt of settlers' applications for survey and the date that the final completed plat is filed in the United States land office and the land made subject to entry. A saving of about six months was accomplished by placing the matter of investigation as to bona fides of applications in the hands of the assistant supervisors of surveys instead of in the field service. Still other plans are being tried out for reducing the time for preparation of field notes and plats. Congress has assisted materially in this by allowing the expenditure of \$25,000 out of the surveying appropriation for bringing up the work in the offices of surveyors general which was in arrears. The expense of drafting has been decreased and a considerable saving in time effected by adopting the method introduced last year of making two of the three official copies of township plats by the photolithographic process. Heretofore, the duplicate and triplicate copies were made by hand at a cost of \$20 per plat, whereas the duplicate and triplicate, together with 20 additional copies, are now made for between \$3 and \$4. The advantage of this saving, however, is all absorbed in meeting the additional demands for office work in offices of surveyors general, resulting from the large increase in field work above stated.

Another considerable saving has been effected in the matter of repairs to instruments of precision used in this service; it has been found that by having all the work done at a central point in the West considerable expense of freight and possible damage are avoided.

In another part of the report is shown a statement in acres of the surveys and resurveys accepted by this office, by States, during the past fiscal year, the total of which is 7,908,035. This does not represent the extent of field operations, as there is an equally large amount of unaccepted surveys, the returns of which have not received final action by this office, partly old contract work, but mostly of surveys completed within the past two years under the direct system, approximating 7,000,000 acres.

Both these amounts would indicate a total of more than 14,000,000 acres, which is the aggregate of the work completed in the offices of

the surveyors general during the same period and submitted to this office.

The annual instructions issued this year to surveyors are substantially the same as those of 1913, which will be found in the last annual report, on page 41.

SURVEYS WITHIN RAILROAD GRANTS.

Most gratifying progress has been made in the survey of lands within the granted limits of railroads. For many years no surveys of any importance were made within such limits except upon the request of the interested companies under the voluntary deposit system. After the approval of the act of June 25, 1910 (36 Stat., 854), steps were taken to secure the surveys by peremptorily calling upon the companies to make the deposits for the survey of their lands under the provisions of said act and by apportioning the funds available under the act of March 2, 1895 (28 Stat., 937), for the Government's part of the survey. But owing to the fact that a year or more elapsed between the ordering of the survey and the final approval of the accounts for the field work, but little was accomplished. By carefully utilizing the agencies at hand, a considerable area will be surveyed during this season. The submission and examination of accounts of the field force engaged in such survey have been expedited, and such accounts are being immediately submitted to the Auditor for the Interior Department under a working arrangement with that officer. It is believed that, under the present system, it will be possible to turn over the funds available for this purpose at least two or three times each season. A recent decision of the Comptroller of the Treasury has proved very helpful in bringing about this result. There can be no question that the public interests demand the survey of these lands at the earliest time practicable. Until such lands are identified by survey, there is no way of determining what lands passed under the grant and what are public.

SURVEYS IN ALASKA.

The necessity for an early extension of the public surveys in Alaska is forcibly stated in the annual report of the United States surveyor general, from which the following extracts are submitted:

As provision has been made by Congress for the construction of a railroad from some point on the tidewater of the Pacific Ocean to the Tanana Valley in the interior of the Territory, it goes without saying that a large number of home seekers will flock to the valley that will be traversed by the railroad, regardless of where its initial point may be and of the sections of country it may pass over.

Before the appropriation for the fiscal year 1915-16 becomes available the route of the railway will, no doubt, be determined, and the appropriation for that year would be utilized accordingly.

It is very desirable that the lines of the public surveys be established before the influx of settlers occurs, as it will then be possible for them to locate their claims by legal subdivisions, which would obviate the liability of having to readjust the boundaries of their claims so as to conform with the lines of the public surveys. This would preclude all danger of losing valuable improvements which the change might cause.

There are large areas of coal lands in Alaska, and it now seems more than probable that a leasing system for their development will be adopted. If such should be the case, the leases could be made much more advantageously to the Government if the ground to be leased were surveyed in the regular manner. In such event, the land leased would be described by legal subdivision, with designation of the township, range, and section. This would avoid the necessity of the lessors having to have the

leased tracts segregated by metes and bounds surveys, which would otherwise be necessary, and which would involve considerable expense. A liberal allowance for such expense would have to be made by the Government when negotiating the leases. When the leased ground reverted to the Government, these independent surveys would be worse than useless to it, therefore it would seem that good administration would dictate that the survey of these fields precede the leasing of them; hence the extension of the lines of public surveys over those coal areas is considered of prime importance.

As stated in my letter to your office, dated January 29, 1914, the coal areas that it will be most desirable to have surveyed at present are situated in the valley or catch basin of Matanuska River, a tributary of Knik Arm, at the head of Cook Inlet and on Bering River near Katalla, southeastern Alaska; also the region of country known as Nenana in the southern part of the Tanana Valley.

The Matanuska and Nenana coal fields can be easily reached by extending primary lines from existing surveys. It will be necessary to establish an independent base and meridian to govern surveys in the Bering River country, as no Government surveys have been made near that region. Owing to the topographical features in the vicinity of Bering River, both the base and meridian would necessarily be short, but long enough to suffice for all surveys that probably will ever be needed in that locality, as it has no known value aside from the coal, coal oil, and petroleum it contains.

There should be additional townships surveyed in Tanana Valley. The townships, the survey of which is needed, border Tanana River between Fairbanks and Tanana Crossing. The areas to be surveyed can be connected with existing surveys by extending the Fairbanks base line east as far as might be needed and projecting township lines south therefrom to Tanana River.

The area included in the Susitna and tributary valleys is estimated at 6,000,000 acres, nearly the whole of which is adapted to agriculture or stock raising. Luxurious and nutritious grasses abound and the climate is mild considering the latitude. Farmers and stock raisers are cognizant of their possibilities when transportation facilities are assured, and are only awaiting developments before going in to possess. If the railroad passes through that valley its rapid settlement is seemingly beyond doubt.

The system of public-land surveys should be extended from Knik westward to the Susitna Valley, which is known to contain a large area of agricultural land and having a climate favorable for the cultivation, growth, and maturing of agricultural products of many kinds; and from Knik eastward, up the Matanuska Valley, covering the coal fields of that region. These valleys will be rapidly filled with settlers when adequate transportation facilities and means of obtaining title to the land are provided. The coal fields in the Katalla, Kenai, and Fairbanks districts should also be surveyed.

Legislation is now pending in Congress providing for the leasing of coal lands in Alaska and authorizing the extension of public-land surveys to include the coal fields of the Bering River and Matanuska deposits and the subdivision of the coal fields into tracts of 40 acres each. This measure carries no appropriation for surveys, and, unless a special appropriation is made for the purpose, the necessary surveys provided for in the bill will require several years for the field and office work. The regular appropriation for surveys and resurveys of public lands is insufficient to provide for these coal-land surveys in Alaska, because of the great number of settlers' and State applications in the various districts, including those of Alaska, which are by statute given the preference in the expenditure of the fund.

In order, therefore, that the coal fields can be surveyed, a special appropriation of \$100,000 will be required. This estimate has been carefully prepared and is intended to include both field and office work. Unless Congress includes an appropriation of this amount in the legislation above referred to before the coal-land leasing bill becomes a law I strongly recommend that a special appropriation, as above suggested, be made.

"SUNK LANDS" AND "LAKE LANDS" IN ARKANSAS.

Much has already been said in the three annual reports preceding this report relative to the "sunk lands" and "lake lands" in Arkansas. The history of these cases during the past year has been marked with important court decisions which have sustained all of the contentions, both as to the law and the facts, previously advanced by the Government in connection with these cases. The issues of law in all of the "sunk lands" and "lake lands" cases in Arkansas are identical and the legal questions have been finally settled. The most important decision from the Government's standpoint was rendered January 26, 1914, by the United States Supreme Court in the case of Chapman & Dewey Lumber Co., etc., v. St. Francis Levee District (232 U. S., 182), in which the court held that neither the State of Arkansas nor the St. Francis levee district have ever had any legal title to certain lands within one of the townships within the "sunk land" area in Arkansas, and that whatever equitable title the State may have had therein was relinquished by it under the terms of the compromise act of April 29, 1898 (30 Stat., 367). The court further decided that the lands involved in that case were lands in place at the date the original surveys of the township were made and that they therefore belong to the United States. Prior to the rendering of this decision the same court had enunciated the same principle of law in a decision rendered by it on December 1, 1913, in the case of Little v. Williams (231 U. S., 335). The latter case involved the question of title to certain lands within the area of so-called "Walker Lake." The court did not, however, go as far in the latter decision as it did in the former decision. In the latter decision it left the question of whether the lands belonged to the Government or to the riparian owners for future determination. The Government was not a party to either of the above-mentioned suits, yet the decision in the former mentioned suit is of as much importance to the Government as it could have been if it were one of the parties to the suit.

The Government itself had, however, caused a suit to be instituted for the purpose of quieting title to lands which it had claimed within the area of what is locally known as "Moon Lake." This suit is styled *United States v. Lee Wilson & Co. et al.*, and has been considered by the Government as a test suit for the purpose of establishing the law and of removing any cloud from the title of the lands involved. On February 20, 1914, the United States District Court for the Eastern Division of the Eastern District of Arkansas, in which the suit was instituted, rendered a decision sustaining every contention, both as to questions of law and questions of fact, advanced by the Government. (214 Fed., 630.) The defendants have taken an appeal, and the case is now pending before the United States circuit court of appeals. Five other suits similar to the suit of *United States v. Lee Wilson & Co. et al.*, supra, have been instituted in the same court. These suits involve similar issues as to the question of title of so-called Buford, Clear, Flat, Grassy, including Campbell's Old Field and Walker Lakes. When the Department of the Interior, on December 12, 1908, and February 27, 1909 (37 L. D., 345 and 462), rendered its decisions holding that the Arkansas "sunk lands" belong to the Government, it undoubtedly did not at that time foresee the vast amount of work which was to be required and the long

period of litigation which would be necessary in order to sustain its contentions. The Government has, however, now been amply rewarded for its work in causing all doubt as to the question of title to these lands to be removed, as it has been a most vexing question in Arkansas for many years.

Since July 1, 1913, the supplemental plats of six townships within the "sunk land" area have been completed and filed, and the public lands within those townships, together with the public lands within one other township within the same area, the supplemental plat of which had been previously filed, were opened to homestead entry. Those lands amount in the aggregate to approximately 41,000 acres. The surveys of the remaining public lands in the "sunk-land" area, comprising approximately 25,000 acres, have been completed in the field and the supplemental plats of those townships will be completed and those lands will be opened to entry before July 1, 1915. The surveys of so-called Moon, Buford, Clear, Flat, Grassy, including Campbell's Old Field, and Walker Lakes, have already been completed and the public lands therein entered. The aggregate amount of public lands within those areas is approximately 13,000 acres. The surveys of the public lands, comprising an area of approximately 9,000 acres, within so-called Carson, Hickory, and Tyronza Lakes, have been completed in the field and the correction of the plats will be completed before January 1, 1915. Those lands will then be opened to homestead entry.

On July 16, 1914, the Department of the Interior rendered an important decision, in which it held that the title to the lands within the area of so-called Big, Brown, and Round Lakes in Arkansas is vested in the Government. The total areas of those three so-called lakes aggregate approximately 27,000 acres. The survey of the public lands therein has been directed. A portion of the area shown on the plat as Wappanocca Lake has also been claimed by the Government and its survey directed.

The question of title to so-called Golden, Youngs, Cypress, Dismal, Mills, and Hudgens Lakes, comprising an area of approximately 10,000 acres, is now under consideration before this office. It can not say, however, at this time whether or not the Government will claim any lands within the areas of those so-called lakes.

The completion of the surveys of the above-described lands has been considerably delayed, owing to the large amount of work caused by fragmentary surveys in other States, but it is confidently expected that all of the surveying of public lands within the "sunk-land" and "lake-land" areas in Arkansas which have been claimed by the Government will have been completed by June 30, 1915.

Nearly all of the sunk lands and lake lands which have thus far been opened to homestead entry had settlers upon them long prior to the time that they were opened to entry, and most of the lands which are to be opened to entry are already settled upon. The avidity with which these lands have been sought by persons from all parts of the United States is merely an illustration which substantiates statements which have been previously made to the effect that there are to be found in the whole southwestern part of the United States no lands more fertile than these. In his report for the fiscal year ending June 30, 1911, the Attorney General stated that these lands are conservatively estimated at \$3,500,000. But

not alone are they valuable for agricultural purposes. Large areas of these lands which have not been stripped of their timber by lumber companies are covered with forests of valuable virgin timber. The timber which has been removed was cut by lumber companies who have been claiming the lands either as grantees from the State of Arkansas or as riparian owners. The stumpage value of this timber is variously estimated at from one-quarter to one-half a million dollars.

"FERRY" OR "CADDO LAKE" OIL LANDS IN LOUISIANA.

During the fiscal year just passed exhaustive investigations have been made by this office in conjunction with the Geological Survey within an area in Caddo Parish, La., which was shown upon the Government plats as a lake locally known as "Ferry" or "Caddo Lake." This so-called lake as originally meandered was about 20 miles long by 15 miles wide, and covers parts of four townships in the State of Louisiana. The balance of it is in the State of Texas. The theory held by the geologists is that this area was originally a part of a well wooded valley through which a narrow bayou flowed; that a log jam formed several centuries ago in the Red River and gradually worked its way up the river until some time during the last quarter of the eighteenth century it had reached a point in the river where it caused the upper waters of the river to overflow the surrounding lands, thus forming a number of lakes, of which Ferry or Caddo Lake was one. The log jam is historically known as the "Great Raft."

Several years ago oil was discovered in the vicinity of Ferry Lake. Soon extensive oil operations were begun, and to-day Ferry Lake is in the midst of perhaps one of the richest oil regions in the United States. Certain mineral applicants filed claims upon unsurveyed lands within the area shown on the Government plats as Ferry Lake, and requested the Government to survey those lands on the ground that they were a part of the public domain. Investigations were accordingly made by this office. The area investigated was located in but one township in the State of Louisiana, and comprised approximately 12,000 acres, the greater part of which was covered with water. The areas within the other townships of that State within which parts thereof were shown upon the original plats as Ferry Lake, had been surveyed as land and patented to the State under the provisions of the swamp-land grant. On January 10, 1913, this office in a letter to the Secretary of the Interior, set forth in full the facts in the case and the legal principles involved therein, and recommended that the whole unsurveyed area within the township investigated be claimed by the Government, and that the part thereof which was at that time land not covered with water, be surveyed. That recommendation brought forth vigorous protests from the State of Louisiana and from the oil companies claiming interest in the lands. After hearing the case the department directed that an exhaustive investigation be made by the surveying division of this office in conjunction with the Geological Survey. That investigation has just been completed and the case will soon be ready to be resubmitted to the department for a final decision. The services of an expert ecologist were also secured from the Forest

Service, Department of Agriculture, and a thorough ecological investigation was made by him. The geological history of the lake, the ecological history of the forest conditions, and the surveying questions involved have been set forth fully in the reports which have been recently submitted.

The important questions which must now be solved are whether or not there are areas of unsurveyed lands which were erroneously or fraudulently omitted from the original surveys, whether that part of the so-called lake which is covered with water is to be legally considered temporarily submerged or permanently submerged, and, if it be held that the Government is the owner of the bed of the so-called lake or any part thereof, and if those lands were swamp in character at the date of the swamp-land grant, whether or not the State is entitled to receive them under the provisions of that grant, now that they are of known mineral value prior to survey. The protestants allege that Ferry Lake is a permanently navigable body of water in the legal sense. That question must also be considered.

These lands are within a petroleum withdrawal, and another question for determination is whether or not the mineral applicants, who are basing the validity of their claims upon the Government's title to the lands, had made mineral claims prior to the date of the withdrawal.

MAP COMPILING AND DRAFTING.

The revision and corrections for the 1915 edition of the United States map, including a new inset map of the Canal Zone, are in hand, and it is planned to issue the map at least one month in advance of the 1914 edition.

The reproduction by photolithographic process of original township plats prepared in the offices of the surveyors general shows highly satisfactory results. In addition to the saving to the Government, copies of all plats of surveys made in the future will be available for Government needs, and for sale to the public at the price of 25 cents each.

Maps of Arkansas, Alabama, Nevada, and Utah have been compiled or revised, and all will be issued in the near future. A map of the western part of the United States, of especial service in questions relating to the public lands, has also been prepared, copies of which are on sale by the superintendent of documents at 15 cents each.

There have been distributed to this and other bureaus 5,944 copies of photolithographic plats, an increase of 1,216 copies over the last fiscal year; and 12,683 copies were sold to the public for 25 cents each.

The demand of the past year for copies of records and general miscellaneous work shows a steady and substantial increase over past years.

ACTION ON FINAL PROOFS.

During the past year the office has made every effort to bring this work more nearly current, so as to avoid delay in issuance of patent. This was considered particularly important with respect to home-

steads. Delay in action on such proofs has been reduced from over 4 months to less than 60 days, and it is expected very shortly to bring this down to approximately 30 days, which is about the shortest time within which such proofs can be disposed of on a practical system throughout the different divisions of the office, namely, accounting, filing and indexing, posting, adjudication and issuance of patent, and frequently reference to still other divisions. The greatest delay in the office at present is in the matter of final proofs on desert-land entries, which is due largely to the difficulties inherent in this class of work by reason of the fact that in recent years great numbers of desert-land final proofs are based on alleged ownership of stock or interest in some large irrigation project. It is necessary to make an expert investigation of these projects in the field, and thereupon consider the reports in this office and in the Geological Survey. Some of these projects are so complex and intricate as to require weeks of investigation and study in order to come to an intelligent conclusion. Extra clerks have recently been assigned to this work, however, and I expect to place same in a much better condition during the coming year.

Final proofs in nearly all other classes of entries are practically on a current basis, and receive reasonably prompt action on receipt thereof in this office. In case of reclamation homesteads, prompt action is particularly desirable by reason of the fact that the law provides that patent may be issued prior to the payment of water right charges, provided all charges due at the time of issuance of patent have been paid, wherefore, if the office fails to take prompt action on such final proofs, additional charges may become due in the meantime, making additional payment and proof necessary. Most of these charges are payable on December 1, and during the fiscal year 1914, the office was able to issue patent prior to December 1, on all satisfactory reclamation homestead final proofs which reached the local office on or before November 22 preceding.

CONSOLIDATION OF CONTEST DIVISIONS.

Formerly there were two divisions in this office, one known as the "private" contest division and the other as the "Government" contest division, each performing substantially a similar class of work in the adjudication of cases, each governed by the same laws, regulations, and principles, separately classified only as the party plaintiff was a private person or the United States. The substantially identical line of action required in each class of cases made it not only logical, but expedient, that both should be handled by the same adjudicating body, by which procedure greater uniformity could be secured in the work, as well as a substantial increase in output. Adopting this view, the office has consolidated the two divisions, by which it has been enabled to relieve 10 clerks from the contest work and make their services available elsewhere in the office; but even with this reduced force, the contest work has been brought up to date.

During the year ending June 30, 1914, the contest division prepared 1,578 decisions in cases appealed to this office, as well as 6,251 decisions in unappealed cases, which in some degree indicates the volume of work which passes through this one division.

IMPROVEMENT OF WORK IN THE DISTRICT OFFICES.

The effectiveness of present methods to prevent errors and omissions in entries allowed by the district land officers is apparent by a study of the number of original entries suspended and referred for action on account of such errors. The percentage of such references for 1914 was 9.9 per cent as against 10.4 per cent for 1913 and 13.1 per cent for 1912, showing a gradual reduction of the percentage of errors occurring on the allowance of original entries. In connection with this, it should be noted that the number of notations in the posting and tract-records divisions was 378,024 in 1912, 382,364 in 1913, and 416,528 in 1914. Such additional tract-book recordation is due not so much to additional public lands disposed of as to the large areas of withdrawals and restorations. In the same line of work 67,889 original homestead and desert-land entries were examined in 1912, 67,274 in 1913, and 80,653 during the year ended June 30, 1914.

PUBLIC-LAND OPENINGS.

Beginning May 1, 1914, surplus lands within the Fort Peck Indian Reservation, in Montana, were opened to entry under the act of Congress approved May 30, 1908 (35 Stat., 558). Proclamation of the President, issued July 25, 1913, provided for a registration and drawing to determine the order in which applications to enter might be presented. The registration was conducted at Glasgow, Great Falls, Havre, and Miles City, Mont., from September 1 to 20, 1913, inclusive, and the drawing at Glasgow began September 23, 1913. Applications for registration were presented by 40,299 persons, and numbers were assigned to 12,000 of these applications. Selections were made by 480 persons under their numbers, and 150 of those who made selections failed to enter the land selected.

A registration and drawing were conducted at Broken Bow, North Platte, and Valentine, Nebr., for certain lands in the former Fort Niobrara Military Reservation, in Nebraska, under departmental regulations of July 25, 1913, as amended October 4, 1913, and for certain lands excluded from the Nebraska National Forest, Nebr., pursuant to proclamation of the President issued September 30, 1913, and departmental regulations of October 4, 1913. The registration was conducted at Broken Bow, North Platte, and Valentine, Nebr., from October 13 to 25, 1913, inclusive, and the drawing at North Platte beginning October 28, 1913. Applications for registration were presented by 76,689 persons and numbers were assigned to 2,000 of these applications.

RESTORATION OF LANDS WITHDRAWN OR RESERVED.

Exercise of the authority conferred on the department by the act of Congress of September 30, 1913 (38 Stat., 113), providing alternative methods for the restoration to entry of lands previously withdrawn or reserved from entry has proved advantageous both to the Government and to the public. Resort to the processes authorized by that act has secured to actual home seekers an opportunity to select or choose places for their future homes in advance of the time when the owners of scrip and others who do not intend immediately

to occupy or make use of the lands entered by them may accomplish their intended appropriations.

Some administrative experience in connection with the relinquishment or release of lands which had been segregated to a State under the so-called Carey Act or withdrawn under the supplemental legislation of March 15, 1910, as preliminary to such segregation has indicated the propriety of resort to one or the other of the methods of restoration sanctioned by the act of September 30, 1913, *supra*.

Similar considerations seem to require a like course of procedure in respect of lands which have been or are to be made subject again to entry as the result of rejection by this office or the department of an application for segregation under the Carey Act or for a withdrawal under the act of March 15, 1910, *supra*. As there is a distinction between a withdrawal and a mere application for withdrawal, and as the act of September 30, 1913, relates only to lands withdrawn or reserved, it has been determined that in rejecting applications for withdrawal or for segregation the order of rejection shall be made to take effect on a date not exceeding 30 days after receipt of the notice of such order in the local office, and that, in the meantime, by posting in the local office and other means of information the public shall be sufficiently advised of the date when such rejection will become effective and of the lands affected thereby.

Since March 4, 1913, this office has been called upon to administer executive orders by which 3,805,470 acres have been excluded from national forests or released from temporary withdrawal for forestry purposes and the public lands therein restored to settlement and entry.

The areas so restored by States are as follows:

Areas excluded from national forests.

	Acres.
Arizona.....	163, 520
Arkansas.....	15, 090
California.....	1, 526, 713
Colorado.....	178, 620
Idaho.....	680
Kansas.....	41, 150
Montana.....	219, 980
Nebraska.....	346, 940
Nevada.....	455, 774
New Mexico.....	175, 605
Oregon.....	452, 726
South Dakota.....	14, 860
Utah.....	175, 129
Washington.....	3, 290
Total.....	3, 805, 476

NATIONAL FORESTS.

Since the issuance of the last annual report, 15 national forests have been reduced and 4 enlarged under the act of June 4, 1897 (30 Stat., 36), and the Caribou National Forest, in Idaho, has been enlarged by the act of April 21, 1914 (Public, No. 87). There are now 163 national forests, embracing 185,321,202 acres, of which area approximately 88 per cent is public land. The decrease in area of national forests since the beginning of the fiscal year is 1,295,446 acres.

During the fiscal year and after the passage of the act of September 30, 1913 (38 Stat., 113), authorizing the President to prescribe a method for opening lands excluded from national forests, or released from reservation or withdrawal, and also giving such authority to the Secretary of the Interior in certain restorations, the unappropriated public lands in 1,642,831 acres excluded from national forests have been restored to settlement and entry under the provisions of said act. Of such area, 346,940 acres excluded from the Nebraska National Forest, Nebr., were restored thereunder by a drawing. In Alabama 16,034 acres have been temporarily withdrawn in connection with a proposed purchase area under the act of March 1, 1911 (36 Stat., 961). Areas temporarily withdrawn for forestry purposes but not needed therefor are released from withdrawal upon the recommendation of the Secretary of Agriculture. Since the issuance of the last annual report 16,190 acres have been released from such withdrawal and the public lands therein opened to settlement and entry.

During the fiscal year 15 administrative stations, embracing 1,168 acres, have been withdrawn by Executive order under the act of June 25, 1910 (36 Stat., 847), for use by the Forest Service in the administration of the national forests, and 831 withdrawals for such purpose have been revoked, covering 150,698 acres. There are now 24 rights of way for wagon roads and 3,133 administrative sites withdrawn, embracing 413,198 acres—160 sites, covering 19,120 acres, being near, and 2,973 sites, covering 394,078 acres in, the national forests.

HOMESTEAD ENTRIES IN NATIONAL FORESTS.

Notices of restoration were issued during the past year, in accordance with the provisions of the act of June 11, 1906 (34 Stat., 233), in 2,580 lists, by which approximately 255,000 acres of agricultural lands in national forests were opened to settlement and entry under the homestead laws. In the previous year approximately 365,000 acres, enumerated in 3,620 lists, were opened. Up to June 30, 1914, approximately 1,405,000 acres have been restored under said act of 1906. There are 777 lists pending for action. During the past year 2,685 homestead entries were made of lands in national forests.

SOLDIERS' ADDITIONAL APPLICATIONS (Under Secs. 2306-7, R. S.)

This work is current, 522 new cases having been received as against 491 the preceding year. On July 1, 1913, there were 770 unclosed cases, while July 1, 1914, there were 656, of which one-sixth are before the Secretary on appeal from the action of this office, about one-third have been allowed and are awaiting final certificate, one-third have been held for rejection and are awaiting further action by applicants, and the remainder are awaiting report from the Field Service or the Geological Survey. The acreage patented was 22,129,724 as compared with 13,787,409 the year before. Cases are not permitted to accumulate, but are acted upon immediately after their receipt. Three clerks now successfully accomplish what 11 did three years ago. The work required in handling an application under the

above sections is out of all proportion to the value of the land involved. A 1-acre right requires as much work as a right for 120 acres and necessitates correspondence with the War Department, Auditor for the War Department, and the Pension Bureau, in order to establish the identity of the soldier with the entryman.

For many years the Land Department held the additional right personal in character and not assignable, but the Supreme Court in *Webster v. Luther* (163 U. S., 331) held otherwise, which, in effect, gives the additional right the special value and character of scrip, locatable upon any lands subject to homestead entry. The present legal status of the right is taken advantage of by the scrip dealer rather than the soldier, or his heir, who usually assigns the right for a very small part of its ultimate value in the hands of the dealer.

The persistence of these claims before the department is no evidence of the continuing bounty by the Government to the soldier, but rather of its practical diversion for the benefit of the dealer.

The repeal of the law at the present time would not operate to the substantial detriment of the original grantee and would relieve the department of a very serious burden that is not carried for his benefit.

DESERT-LAND ENTRIES.

The adjudication of desert-land entries becomes more difficult from year to year. The supply of water available for irrigation is limited, of course, and is drawn upon by desert-land claimants, usually through small individual or community systems or large projects operated under the provisions of State laws, by Government reclamation, and Carey Act projects, as well as by homesteaders and other claimants to and owners of irrigable lands. The more material questions to be considered in connection with desert-land entries are the right to the use of water, its application to the land, and the sufficiency and permanency of the supply. It follows naturally that as the available supply of this valuable commodity is absorbed these questions become more complicated, and closer and more careful field and office inquiry must be made before decision can be reached that title has been earned. During the past fiscal year 2,127 desert-land entries were patented, embracing 346,794.74 acres of land; 15,170 proofs of annual expenditures were examined; and 2,783 applications for extension of time within which to submit proofs and 573 assignments of desert-land entries or portions thereof were considered.

The object and intent of the desert-land law is the reclamation of arid and semiarid land by the application of water. The requirements of the law are not met by the filing of applications for entry without definite arrangements for obtaining water. Radical changes in the desert-land regulations (pars. 12 and 13) were found necessary and were made March 23, 1914, in order to give proper administrative effect to the law and to prevent the segregation of lands for which there is no available water supply under improvident or purely speculative entries based upon declarations of reclamation by irrigation. Those who propose to make desert-land entries can not be too strongly urged to ascertain personally, before filing their applications, whether there is available a sufficient supply of water for the practical and permanent irrigation of their claims.

STATE SELECTIONS.

Indemnity school-land selections aggregating 177,294.68 acres were approved during the past fiscal year; the area approved amounted to 484,571.64 acres in 1913, and 147,988.16 acres in 1912. Under grants made to the several States for specific purposes approvals aggregated 924,921.27 acres in 1914, as compared with 114,086.10 acres in 1913 and 33,292.46 acres in 1912. The total State selections were as follows: 1,102,215.95 acres in 1914; 598,657.74 acres in 1913, and 181,280.62 acres in 1912.

The act of Congress approved February 28, 1891 (26 Stat., 796), was construed by the Land Department for a number of years as a general adjustment act, alike applicable to all States and Territories, and as authorizing exchanges of lands in school sections within reservation boundaries for lands outside, as well as the selection of lands as indemnity for actual losses to the various grants in aid of common schools. In view of a contrary opinion having been expressed by the courts with reference to exchanges (84 Fed., 571; 136 Pac., 981) and of the large importance of the questions involved, it was determined by the department about July 1, 1913, to withhold further approvals of selections based on the exchange provisions of said act of 1891, pending further and remedial legislation or an affirmative decision by the court of last resort. The acreage of indemnity school-land selections approved during the past year, accordingly, was comparatively small.

The statutes making grants of specified sections of land to the several States for common-school purposes contain no provision for the issuance of patent or other evidence of title to the States for the lands granted. The statute is both a grant and a conveyance, so far as the lands are of the character granted and otherwise subject thereto. Mineral lands as a rule are excepted from these grants. The known condition or character of the land at the time the grant takes effect determines whether or not title passes thereunder. Doubt and uncertainty as to the titles of the States naturally follow. It becomes the duty of the Land Department to assert claim to such of these lands as were known of mineral character at the time the grants would otherwise attach and such action is being taken. The remedy for this condition of uncertainty in title is legislation authorizing the issuance of patents by the United States to the several States, in further assurance of title, for the lands in these designated school sections found to have been granted to them. In this connection attention is invited to departmental report of August 12, 1914, on Senate bill 2911.

INDIAN ALLOTMENTS.

During the fiscal year ended June 30, 1914, Indian allotments to the number of 6,769 were disposed of by approval and the issuance of trust patents. The approvals aggregated 5,243 in 1913 and 2,417 in 1912. Those disposed of during the past year were chiefly tribal or reservation allotments, but include about 800 Turtle Mountain selections made under the provisions of the act of April 21, 1904 (33 Stat., 189). In addition, nearly 2,000 patents in fee were issued to Indians and to purchasers of allotted lands.

It was determined, September 23, 1913, that no application for allotment on the public domain made under the provisions of the act of February 8, 1887 (34 Stat., 388), as amended, be accepted unless accompanied by a certificate of the Commissioner of Indian Affairs to the effect that the applicant is an Indian within the meaning of the allotment act, and therefore entitled to such an allotment, in case of compliance with the conditions required in said act. The wisdom of this regulation is apparent from the fact that 136 applications were finally rejected up to June 30, 1914, because the applicants proved not to be entitled, as Indians, to receive allotments on the public domain, and the lands (some 20,000 acres) were thus rendered subject to legitimate disposal under appropriate public-land laws.

* * * * *

In this connection it should be stated that the Carey Act States, during recent years, have made great improvement in their methods of conducting operations under the act, and a much closer cooperation between the States and the Government has been brought about with desirable results. Legislation looking toward the amendment of the Carey Act, in several particulars, is now pending in Congress, and in the absence of any radical departure from the general principle of the Carey Act, a much improved method of handling this important reclamation agency will doubtless be brought about. In the meantime, this office is proceeding as cautiously as possible, to the end that when a segregation is passed upon favorably by the office it is at least a feasible proposition that promises ultimate success. In spite of the unsatisfactory condition hereinabove discussed, this year the applications for withdrawal and segregation totaled 689,312.14 acres, as against 491,093.04 acres during the previous year, indicating that activity along present lines is well sustained.

* * * * *

FOREST LIEU SELECTIONS.

The act of June 4, 1897 (30 Stat., 36), which provided for selection of public lands in lieu of lands in national forests, was repealed by the act of March 3, 1905 (33 Stat., 1264), except as to certain contracts involving land in the San Francisco Mountains and Grand Canyon Forest Reserves, Ariz., also Santa Barbara Forest Reserve, Cal. The area of land in the San Francisco Mountains Forest Reserve involved in said contract at the time of its execution was 975,000 acres, of which there yet remain approximately 33,000 acres that can be offered as base in accordance with the repealing act of March 3, 1905. The exchangeable lands in Grand Canyon and Santa Barbara Forests have now been practically exhausted.

In accordance with departmental regulations issued under the act of June 4, 1897, selections were allowed for both surveyed and unsurveyed land until October 1, 1900, after which time selections were only made on vacant, surveyed, nonmineral land subject to homestead entry, as provided in the amendatory act of June 6, 1900 (31 Stat., 614). There are still pending approximately 1,000 selections awaiting survey of the land selected. All selections suspended because of the

so-called Hyde-Benson frauds are being rapidly disposed of, either by cancellation or patenting.

The exception from the operation of the repealing act is expressed as follows in said act:

The validity of contracts entered into by the Secretary of the Interior prior to the passage of this act shall not be impaired.

The "contracts" which caused the exception to be made in said act were certain agreements entered into on April 2, 1902, between the Secretary of the Interior, the Saginaw & Manistee Lumber Co., William F. Baker, the Santa Fe Pacific Railroad Co., Robert Perrin, E. B. Perrin, and the Aztec Land & Cattle Co. (Ltd.). The reasons for these agreements appear to be as follows:

Soon after the establishment of the above reserves, which included the even-numbered sections lying within the limits of the grant of lands to the Atlantic & Pacific Railroad Co., the advisability of the acquisition by the Government of the adverse holdings became apparent through the disadvantages resulting to both the Government and the owners of the odd-numbered sections among said reserves on account of the "checkerboard" system. The agreement of April 2, 1902, was entered into to accomplish this purpose through an exchange of title under the act of 1897, and is in part as follows:

That from the date of the proclamation establishing such consolidated forest reserve, thenceforward, if the reservation is continued, we will not encumber, sell, or otherwise affect the existing title to the lands to be relinquished, excepting as may be necessary or convenient as a part of the process of conveying a sufficient title thereto to the United States, and will not dispose of, or attempt to dispose of, the timber thereon, or any portion thereof, excepting as to those lands covered by the outstanding timber contracts hereinbefore referred to, and will not by lease, license, or otherwise confer upon any person or company whatsoever any right to graze, hold, or maintain live stock of any kind or character over or upon any of the lands so to be relinquished.

So far as the Santa Fe Pacific Railroad Co. is concerned, the only "outstanding timber contract" that the department recognized, after the passage of the act of March 3, 1905, is the company's contract, No. 17818, which was approved by above agreement of April 2, 1902. This contract was made on the 11th day of October, 1898, between the Santa Fe Pacific Railroad Co. and the Arizona Lumber & Timber Co. Paragraph 6 of said agreement states in part:

That the party of the second part shall have the right to enter and work upon said sections hereinbefore mentioned for the purpose of cutting timber as herein provided * * *, subject, however, to any former contracts which may have been made by the party of the first part and to the rights created thereby * * *: *Provided, however,* That said party of the second part shall cut and remove all timber for which it shall have paid within five years from the expiration of said term of eight years from the date hereof, or if this contract be sooner terminated or the obligation of the party of the second part to further sell shall cease and be determined, as above provided, then within five years from such termination, and upon the expiration of five years all right of the party of the second part to cut and remove any timber from any of said sections of land hereinbefore recited, whether such timber may have been heretofore or may hereafter be paid for by said party of the second part, and all other rights hereby granted to it, shall forthwith cease and determine, and said party of the second part shall thenceforward have no interest or right whatsoever in said or any timber remaining upon said sections heretofore recited or set forth, or any part thereof; but all interests or title of the party of the second part in or to any timber remaining, standing upon, uncut, or not removed before the expiration of said five years from any of said sections or part of sections hereinbefore recited, whether paid for or not by the party of the second part, shall immediately, upon the expiration of such five years, revert to and reinvest in the said party of the first part.

This agreement was effective January 1, 1899, terminating at the expiration of 13 years, or December 31, 1911. However, on November 29, 1907, the department extended the right to cut timber until January 1, 1917; and upon a recommendation by the Forest Service the department on March 22, 1912, in a letter addressed to the Secretary of Agriculture, stated that the Interior Department would approve the proposed extension of time for the removal of timber by the Arizona Lumber & Timber Co. from certain lands within the San Francisco Mountains Forest Reserve from January 1, 1917, to January 1, 1926, a further extension of nine years.

It appears that on May 19, 1903, an agreement, supplemental to the agreement of October 11, 1898, was entered into between the Santa Fe Pacific Railroad Co. and the Arizona Lumber & Timber Co. modifying the original agreement. This modification provided for the substitution of lands which were included in the agreement for exchange, but it also made a further modification, extending the period within which the timber was to be cut and removed, being from October 11, 1911, to October 11, 1916. This supplemental agreement of May 19, 1903, was never approved by the department until November 29, 1907, as above referred to. Since that date this office has been accepting deeds containing the provision that the timber may be removed from the land covered thereby until December 31, 1916, and this is printed in such deeds reconveying lands to the United States; and it is presumed that later deeds to be made covering lands where timber-cutting contracts are extended until 1926 will also contain said extension.

The department in approving the supplemental agreement of the railroad company on November 29, 1907, did so on certain conditions, one of which was that the railroad company was to deed all lands not needed for railroad purposes to the United States Government in the form of two proposed deeds, and that the question as to what was necessary for railroad purposes would be left to future considerations. May 12, 1917, this office was instructed by the department to call upon said railway company to execute and deliver proper deeds of reconveyance for all lands which, by its agreement of April 7, 1902, it was to convey to the United States. The omission from the deeds filed in response to this call of certain tracts deemed "necessary for railroad purposes" by the company, still remains an unsettled item under this contract. The amount of land reconveyed to the United States by the Santa Fe Pacific Railroad Co. within the Grand Canyon Reserve, and used as a basis for selecting other lands, totals approximately 377,080 acres, and of this area 208,480 acres have since been eliminated from said forest reserve.

LIEU SELECTIONS FOR LANDS IN INDIAN RESERVATIONS.

Under the act of April 21, 1904 (33 Stat., 211)—which provides for an exchange by an owner of private land over which an Indian reservation has been extended by Executive order for nonmineral, nontimbered, surveyed public lands of equal area and value and situated in the same State or Territory—applications to select lands in exchange for private lands in the Zuni and Navajo Reservations,

in New Mexico, and the Moqui Indian Reservation, in Arizona, have been filed to the extent of approximately 1,000,000 acres, and patents have issued for over 500,000 acres.

A deed to 327,000 acres, included as part of the 1,000,000 acres above mentioned, was accepted December 28, 1912, by the Government for lands situated in the Navajo Indian Reservation, Ariz., as a proper basis for an exchange of title, and these reconveyed lands are now bases of certain selections which are held suspended by the order of the department, pending the disposition of protests by the State land commission of Arizona against the exchange of said lands. The suspension of selections in Arizona also includes 110,000 acres, the bases of which are a part of the Navajo Indian Reservation.

No order of suspension has issued as to the exchange of lands in the Zuni and Navajo Indian Reservations, in New Mexico, and it is estimated that there remain pending in said State applications to the amount of 25,000 acres.

* * * * *

NATIONAL MONUMENTS.

Two additional reservations, under the provisions of the act approved June 8, 1906, were created during the year, as follows:

The Cabrillo National Monument, Cal., containing about half an acre of land and located on Point Loma within the military reservation of Fort Rosecrans. Upon this reservation the people of California will erect an historic statue of Juan Rodriguez Cabrillo, the discoverer of California. This monument is under the jurisdiction of the War Department.

The Papago Saguaro National Monument, Ariz. This reservation embraces approximately 2,050 acres of nonirrigable rocky and desert land, which is of no agricultural value, but upon which is found a splendid collection of characteristic desert flora, including many striking examples of giant cactus, yucca palms, and other species of great scientific interest. There are also within the tract pictographs on the faces of the rocks, the work of prehistoric peoples. This reservation is located about 8 miles northeasterly from Phoenix.

The unauthorized spoliation of many of the national monuments, discussed in previous annual reports of this bureau, continues, and I again earnestly request that Congress be asked to supply a small fund which will enable this bureau to employ, at practically nominal salaries, local custodians, whose services are greatly needed.

This recommendation has formed a part of the annual report of this bureau for a number of years past.

For a table showing location and area of monuments see Appendix, page 181.

BIRD RESERVATIONS.

During the fiscal year two new reservations for the protection of native birds were created. These are the Anaho Island Reservation, created September 4, 1913, located in Pyramid Lake, Nev., and the Smith Island Reservation, created June 6, 1914, located in the Strait of Juan de Fuca, Wash., and embracing two small islands, Smith

Island and Minor Island, the latter often covered by high tide, which are located about 14 miles north by west from Port Townsend. Anaho Island has been the breeding ground for countless thousands of the great white pelicans, and is the only bird reservation strictly reserved for the preservation of this species.

The islands in the Smith Island Reservation are still included in the lighthouse reservation created in 1854. Many species of wild ducks and geese make their home in the kelp beds about these islands, and Minor Island especially is a regular roosting place, not only for these birds but for thousands of migrants, including many species of shore birds, which literally cover the island during the migrating seasons. These birds have been slaughtered by thousands by the pot and market hunters, and although the reservation is small the protection of the vast numbers of birds which frequent the islands makes the reserve an important link in the bird-protection movement.

For a list of bird reserves, showing location and area, see Appendix, page 181.

POWER-SITE RESERVES.

By authority of the provisions contained in the act of June 25, 1910 (36 Stat., 847), as amended by the act of August 24, 1912 (37 Stat., 497), and the act of June 25, 1910 (36 Stat., 855), 247,639 acres were withdrawn for water-power site purposes during the year 1914; during the same period there were restored 90,305 acres previously withdrawn.

At the present time the outstanding power-site withdrawals are as follows:

Area withdrawn for power sites.

	Acres.
Alabama.....	120
Arkansas.....	17,704
Arizona.....	190,431
California.....	222,769
Colorado.....	270,390
Idaho.....	272,759
Minnesota.....	11,020
Montana.....	157,041
Nebraska.....	761
Nevada.....	19,087
New Mexico.....	13,577
Oregon.....	266,710
Utah.....	378,147
Washington.....	97,537
Wyoming.....	73,564
Total.....	1,991,617
* * * * *	

THE DISPOSITION OF THE PUBLIC DOMAIN.

The history of the disposition of the public domain has been by some, and I think properly, divided into three epochs - the period of sale, the period of development, and what might be termed the period of conservation. The first period terminated with the passage of the first homestead law of May 20, 1862 (12 Stat., 392). The effects of this and subsequent legislation which had for an object the settlement and consequent development of the public lands can be, so far as it

led to the disposition of the public lands, best observed by a study of the statistical tables appended to the annual reports of the Commissioner of the General Land Office. These tables are compiled from the monthly and quarterly reports and accounts of the United States district land offices throughout the various public-land States, and so far as they relate to the disposal of lands under applications and entries are based upon the allowances of the district offices and not upon patents issued in the General Land Office. A separate table for patents issued is also appended in the annual reports.

Contrary to the general belief, the business of the land service is increasing, although the moneys received from public-land sources, as will hereinafter be explained, are decreasing. An example of the increase in the public-land business is shown by the total area patented during the past five fiscal years, 1910 to 1914, inclusive, as follows:

Areas patented, 1910 to 1914.

	Acres.
1910.....	10,983,150
1911.....	12,272,495
1912.....	10,135,475
1913.....	12,678,076
1914.....	14,391,071

Of these areas, during the fiscal years mentioned, the following were respectively patented under the homestead laws:

Homestead patents issued, 1910 to 1914.

	Acres.
1910.....	7,404,598
1911.....	8,623,168
1912.....	8,403,714
1913.....	8,991,175
1914.....	11,167,700

It would naturally be assumed that the largest field of activity in the disposal of the public lands would be that relating to homesteads, which is true, as the figures stated indicate; but the large increase in the homestead business during the past two fiscal years of 1913 and 1914—especially in 1914, when of a total of 14,391,071 acres patented, 11,167,700 were patented under the homestead laws—to the casual observer would need considerable explanation. This increase is explained by the passage of the three-year homestead act of June 6, 1912, and the enlarged homestead act of February 19, 1909, together with the so-called surface act of June 22, 1910, whereby entrymen could elect to take patent with the coal reserved to the United States, which greatly encouraged the making of homestead entries because of the larger area to be secured, in the one instance, and of the shorter period in which title could be obtained without the cash payment required by the commutation provisions of the homestead laws.

With the abandonment of the idea of sale of the public lands and the enactment of legislation looking toward their development, the intent of Congress was apparently to permit of different classes of lands to be entered according to the character of the lands. However, Congress made no provision for a classification by the Government of such lands, and the burden of this classification was placed upon the applicant. The result of this practice is too well known to need any extended comment. It can not be estimated how many

acres of coal lands were patented under the timber and stone law because of misrepresentations on the part of applicants, nor can it be said with any degree of accuracy how many acres of timberlands were, upon fraudulent proofs, patented under laws other than those which provide for their disposition. Neither can it be shown from these tables how much actual settlement and development resulted from the legislation which had these as its object, for with the passing of title from the Government by the issuance of patent all trace of the land, so far as this service is concerned, is lost, although it is true that in a very small proportion of cases suits are instituted to set aside patents because of fraud entering into the securing thereof.

As has been stated, the largest number of entries are made under the homestead laws, and prior to the act of June 6, 1912, patent could be secured under these laws only upon commutation of entry after the lapse of 14 months and payment for the land at the rate of \$1.25 or \$2.50 per acre, depending upon whether the land was situated within or without the primary limits of a railroad grant; or upon the expiration of five years with payment for the land of a commission of 1 or 1½ per cent for each officer of a district land office, computed upon the price of the land which would have been exacted if commutation had been sought. The act of June 6, 1912, permitted proof after the expiration of three years with the payment of commissions as in the case of five-year proof. The effect of this legislation was greatly to diminish the number of homesteads commuted, and largely to increase the number of homestead proofs without any payment for the land. The following will show, for the past five fiscal years, 1910 to 1914, inclusive, the number of final proof and commuted homesteads:

Final proof and commuted homesteads, 1910 to 1914.

Year.	Final.			Commuted.		
	Number.	Area.	Amount.	Number.	Area.	Amount.
		<i>Acres.</i>			<i>Acres.</i>	
1910.....	23,253	3,795,862.89	\$126,439.00	17,092	2,559,123.08	\$2,950,291.01
1911.....	25,908	4,620,197.12	148,987.11	17,879	2,635,969.11	3,008,387.81
1912.....	24,326	4,306,068.52	140,746.70	16,738	2,461,871.86	2,759,032.96
1913.....	53,252	10,009,285.16	353,748.41	6,111	875,536.98	1,015,272.22
1914.....	48,724	9,291,121.46	348,626.57	4,584	650,196.73	778,060.12

These figures show, beginning with the fiscal year 1913, a heavy decrease in the number of commuted homesteads from 16,738 in the preceding fiscal year to 6,111, and for the year 1914 a further decrease to 4,584, with a proportionate reduction in moneys received in connection therewith. These figures also show a practical doubling in the number of final homesteads due to the three-year law of from 24,326 in 1912 to 53,252 in 1913 and 48,724 in 1914.

For the past five fiscal years, 1910 to 1914, inclusive, original entries were made of all classes for the following areas:

Original entries, 1910 to 1914.

	<i>Acres.</i>
1910.....	26,391,269.09
1911.....	17,639,099.54
1912.....	14,574,688.82
1913.....	15,867,222.45
1914.....	16,522,852.12

For the last four fiscal years it will be observed that the area originally entered has varied but little. Of the number of acres originally entered a considerable amount is never embraced in patents, because of relinquishment or cancellation of the original applications during the period which must elapse from the date of application until final proof.

For the past five fiscal years, 1910 to 1914, inclusive, final timber and stone entries were made as follows:

Final timber and stone entries, 1910 to 1914.

Year.	Number.	Area.	Amount.
		<i>Acres.</i>	
1910.....	1,453	170,989.46	\$561,871.16
1911.....	1,343	143,456.45	476,745.07
1912.....	1,193	129,297.09	436,186.04
1913.....	946	100,532.28	311,803.31
1914.....	792	84,082.20	259,173.67

These figures show a considerable decrease in the number of timber and stone final entries made and also in the area disposed of, which, it is believed, is partly due to the fact that with the inspection and appraisalment of the lands by an agent of the Government little, if any, effort is made fraudulently to obtain coal or mineral lands under the timber and stone law. It is also believed that inspection and appraisalment have effectually stopped the practice of obtaining lands for grazing purposes under the timber and stone law.

For the past five fiscal years, 1910 to 1914, inclusive, the following final mineral entries were made:

Final mineral entries, 1910 to 1914.

Year.	Number.	Area.	Amount.
		<i>Acres.</i>	
1910.....	1,114	77,549.54	\$295,239.47
1911.....	1,056	69,144.33	280,596.52
1912.....	905	68,818.17	259,538.05
1913.....	737	39,047.55	162,668.87
1914.....	788	49,371.11	184,325.00

These figures show a gradual decrease in the amount of final mineral entries made, except that for the year 1914 there is a slight increase of 51 entries over the prior year.

There has been a gradual decrease in the number of final coal entries during the fiscal years in question, as the following tables will show:

Final coal entries, 1910 to 1914.

Year.	Number.	Area.	Amount.	Average price per acre.
		<i>Acres.</i>		
1910.....	248	38,325.26	\$772,325.41	\$20.15
1911.....	108	23,001.95	384,024.90	16.69
1912.....	68	9,053.34	430,767.58	47.58
1913.....	76	10,338.70	270,425.10	26.15
1914.....	63	8,157.45	268,201.60	32.87

This table indicates, however, a marked increase in the price per acre received by the Government for its coal lands. Several tracts were disposed of for as high as \$410, \$405, and \$400 per acre.

As to desert-land entries, the situation is somewhat different from that in coal, mineral and timber, and stone cases, in that a desert-land entry is essentially an agricultural entry. It also differs in its payments from the other three classes alluded to in that a payment of \$0.25 per acre is required with the original desert entry and an additional payment of \$1 per acre for the final desert entry. The following will show the desert-land originals for the fiscal years 1910 to 1914, inclusive:

Original desert-land entries, 1910 to 1914.

Year.	Number.	Area.	Amount.
		<i>Acres.</i>	
1910.....	15,620	2,899,730.03	\$723,241.50
1911.....	11,284	1,922,960.66	478,535.89
1912.....	10,392	1,742,375.84	435,208.21
1913.....	8,870	1,571,150.35	395,091.23
1914.....	6,665	1,129,630.57	282,449.09

For the same period the following final desert-land entries were made:

Final desert-land entries, 1910 to 1914.

Year.	Number.	Area.	Amount.
		<i>Acres.</i>	
1910.....	2,041	324,246.52	\$324,091.70
1911.....	2,136	349,846.67	348,866.71
1912.....	2,454	394,870.44	396,703.47
1913.....	2,102	349,889.12	350,366.12
1914.....	2,322	375,774.20	375,861.10

From these figures it will be observed that, while the number of desert-land finals has not varied to any great extent for the years given, the original desert-land entries have decreased from 15,620 in 1910 to 6,665 in 1914. This decrease in the original desert entries is due in part to the passage of the enlarged-homestead act of February 19, 1909, which allows, in certain designated areas, the entry of 320 acres; in part to a more rigid enforcement of the law as to actual water supply and reclamation; and in part to the decrease in lands available for irrigation.

The marked decrease in the annual additions to the reclamation fund during recent years has raised the question as to whether or not it would be more conducive to the general development if the Government should charge a low price, say \$1.25 per acre, in addition to usual fees and commissions, for all lands disposed of under the homestead laws, the proceeds to be used for the reclamation of greater areas of desert lands. In this connection it is interesting to note that if such had been the practice from 1910 to 1914, inclusive, assuming that the same number of homesteads had been entered, it would have produced about \$40,000,000. The experience of the Government in the sale of Indian lands tends to the belief that such a practice would not greatly deter settlement.

UNAPPROPRIATED PUBLIC LANDS.

Annually there is furnished to the public, in circular form, a tabulated statement or schedule showing, by States, land districts, and counties, the area of unappropriated and unreserved public lands, surveyed and unsurveyed, together with a brief description of the character of the vacant lands. While this schedule always carries the date line of July 1, it is usually issued at a much later date, sometimes several months, due to the extreme difficulty of securing the necessary statistics from the district land offices. This year, however, the necessary statistical information was so promptly furnished that the office was able to compile and issue the schedule ready for distribution by the last day of July.

In this connection it should be stated that the description of the lands in the above-mentioned circular and table is of a very general character. The fact that the Government has made no general classification of all its public lands and is unable to give the public any description thereof by legal subdivisions has been the subject of much comment and no little criticism. The Geological Survey has done a large amount of work in the way of classification of mineral lands, and for the purposes of the enlarged-homestead act, but no general classification of agricultural land has ever been attempted, save the descriptions made by the surveyors in their field notes, which, while valuable and sufficient for that purpose, do not afford home seekers the detailed information they desire in seeking public lands for settlement and entry. In the past, the greatest amount of classification has been made by the settler who seeks out the land he desires to suit his purpose. I desire to suggest, therefore, for consideration, the question of whether or not it is advisable to recommend to Congress that provision be made for such a detailed classification and taking of stock, so to speak, of the public-land resources, both for the purpose of assisting the settler and to afford Congress more detailed and accurate information as a basis for future legislation.

* * * * *

GENERAL RESULTS.

On the whole I believe that I am justified in the statement that results indicate that the Land Department has made good progress during the fiscal year 1914. As a rule the work has been brought more nearly current, a number of weak points in the organization have been strengthened, and numerous difficult questions have been settled, though many still confront us. I feel that in the main we have had the full cooperation of all employees in this and subordinate offices. Registers, receivers, and surveyors general are getting out of the habit of viewing those offices as political sinecures and are doing real substantial work, in many instances of a high order. This bureau has endeavored at all times, to the best of the ability of those in charge, to administer the important governmental matters within its jurisdiction as required by law and to carry out the broad, constructive policies you have from time to time outlined for the progress and permanent upbuilding of the public-land States and for the general welfare.

Very respectfully,

CLAY TALLMAN, *Commissioner*.

The SECRETARY OF THE INTERIOR.

STATISTICS RELATING TO THE DISPOSITION OF THE PUBLIC DOMAIN.

Area of States and Territories.

[Based upon careful joint calculations made in the General Land Office, the Geological Survey, and the Bureau of the Census.]

State or Territory.	Land surface.		Water surface.		Total areas.	
	<i>Sq. m.</i>	<i>Acres.</i>	<i>Sq. m.</i>	<i>Acres.</i>	<i>Sq. m.</i>	<i>Acres.</i>
Alabama.....	51,279	32,818,560	719	460,160	51,998	33,278,720
Arizona.....	113,810	72,838,400	146	93,440	113,956	72,931,840
Arkansas.....	52,525	33,616,000	810	518,400	53,335	34,134,400
California.....	155,652	99,617,280	2,645	1,692,800	158,297	101,310,080
Colorado.....	103,658	66,341,120	290	185,600	103,948	66,526,720
Connecticut.....	4,820	3,084,800	145	92,800	4,965	3,177,600
Delaware.....	1,965	1,257,600	405	259,200	2,370	1,516,800
District of Columbia.....	60	38,400	10	6,400	70	44,800
Florida.....	54,861	35,111,040	3,805	2,435,200	58,666	37,546,240
Georgia.....	58,725	37,584,000	540	345,600	59,265	37,929,600
Idaho.....	83,354	53,346,560	534	341,760	83,888	53,688,320
Illinois.....	56,043	35,867,520	622	398,080	56,665	36,265,600
Indiana.....	36,045	23,068,800	309	197,760	36,354	23,266,560
Iowa.....	55,586	35,575,040	561	359,040	56,147	35,934,080
Kansas.....	81,774	52,335,360	384	245,760	82,158	52,581,120
Kentucky.....	40,181	25,715,840	417	266,880	40,598	25,982,720
Louisiana.....	45,409	29,061,760	3,097	1,982,080	48,506	31,043,840
Maine.....	29,895	19,132,800	3,145	2,012,800	33,040	21,145,600
Maryland.....	9,941	6,362,240	2,386	1,527,040	12,327	7,889,280
Massachusetts.....	8,039	5,144,960	227	145,280	8,266	5,290,240
Michigan.....	57,480	36,787,200	500	320,000	57,980	37,107,200
Minnesota.....	80,858	51,749,120	3,824	2,447,360	84,682	54,196,480
Mississippi.....	46,362	29,671,680	503	321,920	46,865	29,993,600
Missouri.....	68,727	43,985,280	693	443,520	69,420	44,428,800
Montana.....	146,201	93,568,640	796	509,440	146,997	94,078,080
Nebraska.....	76,808	49,157,120	712	455,680	77,520	49,612,800
Nevada.....	109,821	70,285,440	899	566,160	110,690	70,841,600
New Hampshire.....	9,031	5,779,840	310	198,400	9,341	5,978,240
New Jersey.....	7,514	4,808,960	710	454,400	8,224	5,263,360
New Mexico.....	122,503	78,401,920	131	83,840	122,634	78,485,760
New York.....	47,654	30,498,560	1,550	992,000	49,204	31,490,560
North Carolina.....	48,740	31,193,600	3,686	2,359,040	52,426	33,552,640
North Dakota.....	70,183	44,917,120	654	418,560	70,837	45,335,680
Ohio.....	40,740	26,073,600	300	192,000	41,040	26,265,600
Oklahoma.....	69,414	44,424,960	643	411,520	70,057	44,836,480
Oregon.....	95,607	61,188,480	1,092	698,880	96,699	61,887,360
Pennsylvania.....	44,832	28,692,480	294	188,160	45,126	28,880,640
Rhode Island.....	1,067	682,880	181	115,840	1,248	798,720
South Carolina.....	30,495	19,516,800	494	316,160	30,989	19,832,960
South Dakota.....	76,868	49,195,520	747	478,080	77,615	49,673,600
Tennessee.....	41,687	26,679,680	335	214,400	42,022	26,894,080
Texas.....	262,398	167,934,720	3,498	2,238,720	265,896	170,173,440
Utah.....	82,184	52,697,760	2,806	1,795,840	84,990	54,493,600
Vermont.....	9,124	5,839,360	440	281,600	9,564	6,120,960
Virginia.....	40,262	25,767,680	2,365	1,513,600	42,627	27,281,280
Washington.....	66,836	42,775,040	2,291	1,466,240	69,127	44,241,280
West Virginia.....	24,022	15,374,080	148	94,720	24,170	15,468,800
Wisconsin.....	55,256	35,363,840	810	518,400	56,066	35,882,240
Wyoming.....	97,594	62,460,160	320	204,800	97,914	62,664,960
Total.....	2,973,890	1,903,289,600	52,899	33,855,360	3,026,789	1,937,144,960
Alaska.....					590,884	378,165,760
Guam.....					210	134,400
Hawaii.....					6,449	4,127,360
Canal Zone.....					436	279,040
Philippine Islands.....					115,026	73,616,640
Porto Rico.....					3,435	2,198,400
American Samoa.....					77	49,280
Total.....					3,743,306	2,395,715,840

Owing to their location adjoining the Great Lakes, the States enumerated below contain approximately an additional number of square miles as follows: Illinois, 1,674 square miles of Lake Michigan; Indiana, 230 square miles of Lake Michigan; Michigan, 16,653 square miles of Lake Superior, 12,922 square miles of Lake Michigan, 9,925 square miles of Lake Huron, and 460 square miles of Lakes St. Clair and Erie; Minnesota, 2,514 square miles of Lake Superior; New York, 3,140 square miles of Lakes Ontario and Erie; Ohio, 3,443 square miles of Lake Erie; Pennsylvania, 891 square miles of Lake Erie; Wisconsin, 2,378 square miles of Lake Superior and 7,500 square miles of Lake Michigan.

In addition to the water areas noted above, California claims jurisdiction over all Pacific waters lying within 3 English miles of her coast; Oregon claims jurisdiction over a similar strip of the Pacific Ocean 1 marine league in width between latitude 42° north and the mouth of the Columbia River; and Texas claims jurisdiction over a strip of Gulf water 3 leagues in width, adjacent to her coast and between the Rio Grande and the Sabine River.

REPORT OF THE COMMISSIONER OF PENSIONS.

WASHINGTON, D. C., *August 1, 1914.*

SIR: I have the honor to submit the annual report of the operations of the Bureau of Pensions for the fiscal year ended June 30, 1914:

TOTAL AMOUNTS PAID FOR PENSIONS.

Heretofore there has been repeatedly published a statement of the amount disbursed for pensions from July 1, 1790, to June 30, 1865. Since 1866 there was another table showing the disbursement for pensions by fiscal years since 1865, with the cost of maintenance of the pension system, and the number of pensioners on the roll at the close of each year. The figures have become so numerous that it is thought no good purpose will be served by repeating them. The total, however, for all disbursements for pensions and maintenance of the pension system from 1866 to 1913, inclusive, is shown, and then there is stated the disbursements for 1914 and the new total brought down, as follows:

Expenditures for pensions.

Years.	Paid as pensions.	Cost of administration.	Total.	Number of pensioners.
1866 to 1913.....	\$4,461,094,380.45	\$125,871,965.64	\$4,586,966,346.09	.....
1914.....	172,417,546.26	2,066,507.15	174,484,053.41	785,239
Grand total.....	4,633,511,926.71	127,938,472.79	4,761,450,399.50	.....

DEATHS AND PERCENTAGES.

The following shows the loss and percentage of loss to the pension roll by death of Civil War soldier pensioners from the year 1909 to 1914, inclusive. This is the first time that the percentages have been shown. It will be seen that the percentage of loss is increasing with the advancing age of the veterans.

Losses to pension roll, 1909 to 1914.

Year.	On roll at beginning of year.	Loss by death during year.	Percentage of loss.
1909.....	620,985	32,831	5.2
1910.....	593,961	35,312	5.9
1911.....	562,615	35,243	6.2
1912.....	529,884	33,981	6.3
1913.....	497,263	36,064	7.2
1914.....	462,379	33,639	7.3

The losses by death are from the cases added to the roll in the course of the year as well as those on the roll at the beginning of the year, but, as you will observe, the percentages are ascertained by using only the number on the roll at the beginning of the year.

CHANGE OF ADDRESS.

The number of pensioners who are moving about is very considerable. There is an average of 19,000 changes a month. Difficulties arise from the lack of care on the part of the pensioner in notifying the bureau of changes. This matter is so important that the following circular was sent out:

When you desire a change of address, fill in the spaces below and mail to this office at least **THIRTY DAYS** before your payment is due.

Name..... Ctf. No.....
 Street or
 R. F. D.....
 Town or
 City..... State,.....

SAVINGS AND ECONOMIES.

The great trust committed to the management of the Pension Bureau has been faithfully administered. No pension has been withheld which the law allowed. The pensions given by Congress as the reward of the Nation to those who served in its wars have been measured out with great solicitude and care for its beneficiaries; but the limits fixed by the law itself have been regarded as the boundary of the power of the commissioner. Of the large amounts appropriated for pensions, nothing due has been kept back, but it is gratifying to know that during the last fiscal year \$7,658,572.87 less than was appropriated has been paid out. For the expenses of the bureau economy has been practiced. From the appropriations for medical examinations the estimated saving is \$171,142.44. There was saved likewise from the appropriation for field and special examinations the sum of \$105,694.03. The saving because of the payments direct from the bureau, instead of through the numerous agencies, is estimated to amount annually to the sum of \$145,000.

The estimated saving of \$145,000 by the change in method of payment of pensions is reached as follows:

The total expenditure during the fiscal year 1912 (see Exhibit 3, p. 28, report for that year) for salaries of pensions agents, clerk hire and rent of pension agencies (contingent expenses not included) was \$452,903.78, and the amount paid out on the disbursing office roll for the fiscal year ended June 30, 1914, was \$306,642.17, the exact difference for the two years being \$146,261.61.

When the employees in the pension agencies were brought to the Pension Bureau, they were paid from a lump-sum appropriation. Last year they were placed on the statutory roll, but the disbursing office was regarded as separate from the bureau proper. For 1915 the disbursing office will be completely amalgamated with the bureau. This will prove valuable in many respects as to management, and particularly will allow the free arrangement of the employees according to the variations in the amount of work in the different divisions.

The payment for the fiscal year 1913, on account of pensions, was \$174,171,660.80, while the payment for the same purpose for the fiscal year 1914 was \$172,417,546.26. This shows that the largest

amount ever paid out was expended in 1913. Up to that time there had been a gradual ascent, but the summit has been passed, and a decrease in the amount may be expected to continue.

The amount paid to pensioners in foreign countries in 1912 was \$967,863.89; in 1913 it was \$1,166,753.35. This increase was because the number of pensioners abroad was 30 more, while the amount was also increased by reason of the increased rates allowed by the act of May 11, 1912. The payments on the same account for the year 1914 amount to \$1,034,071.88.

EFFICIENCY.

Much consideration was given to the method of determining the efficiency and the system of recording the rating of each employee. The method heretofore in use was unsatisfactory because the notation was too brief. The act making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1913, provided in section 4 (p. 60, Public, 299) that the Civil Service Commission should, "subject to the approval of the President, establish a system of efficiency ratings for the classified service," etc.; it is understood, however, that so far as the Interior Department is concerned this has not yet been done. The system adopted by the Department of Justice, as shown by Appendix 33 (p. 452) in the Report of the Attorney General for 1912, was considered and found to be very helpful in coming to a conclusion on the subject. After thorough investigation and discussion, all of the chiefs of divisions participating therein, the following order was issued:

ORDER.

MARCH 6, 1914.

Chiefs of divisions:

You will please prepare an efficiency report, in quadruplicate, of the employees in your respective divisions, covering a period of 6 months, and submit same not later than March 21, 1914.

The report will be arranged alphabetically on Form 3-122. As the consolidated report must be indexed, have the same names on the corresponding pages of each report. Do not number the pages.

The individual grade and efficiency of each employee will be estimated in accordance with the attached instructions, in method and manner as shown by sample page of report.

INSTRUCTIONS.

In estimating the rating and efficiency of each employee the following points will be observed as a basis for individual grading:

1. Duties, describe fully. Is service performed with industry, accuracy, neatness, and dispatch?
2. Interest manifested in own work, and that of division and office.
3. Is employee generally efficient, showing ability, judgment, initiative, and resourcefulness?
4. Capacity for higher grade of work, or the reverse.
5. Is employee incapacitated or superannuated?
6. Is employee overpaid or underpaid for service rendered?
7. Should be promoted, demoted, or retain present salary.

In rating:

Excellent will represent 95 to 100.

Good, 85 to 94.

Fair, 70 to 84.

Poor, 0 to 69.

Ratings between these figures in each grade will be according to degree merited by the employee. Express (for instance) E-97, G-94, F-80, P-60 in the column provided therefor.

REDUCTION OF FORCE.

At the end of this fiscal year, because of the falling off in the work of the Pension Bureau under the estimates submitted for appropriations and as confirmed by the acts of Congress, it became necessary to reduce the force of the Pension Bureau 145 in number. This was accomplished with great travail.

The necessity for this reduction in the number of employees in the bureau caused the officials much regret. The Secretary of the Interior directed that in effecting reductions and removals the bureau should be guided by considerations of efficiency and humanity. These cardinal principles were followed as far as practicable, considering the fact that there could be no exact measurement of comparative justice in making selections from the nearly 1,400 employees of the bureau. The task was laborious, continuous, and disheartening, but the labor was made easier by manifestations of the loyalty and forbearance of the employees themselves. The old soldiers and the soldiers' widows were treated with the utmost consideration. There had been discussion of the doubtful application of the law in their behalf, but the commissioner was in hearty sympathy with them, anyhow, and treated them with favor and kindness. There were 247 old soldiers in the bureau, not one of whom was dropped; some of them were lowered in salary for their own benefit; unless that had been done, some whose inefficiency was painfully apparent would have been dropped. As it was, none were dropped. There were 23 widows of soldiers and sailors on the roll; none of them were dropped, and the salaries of only four of them were changed. In making changes the disinterested advice of five of the principal officers of the bureau was had; their assistance was invaluable; the list was repeatedly gone over during eight weeks' time; in addition to this, in the instance of the old soldiers, six other old soldiers who are leaders in their class, were consulted and the prepared list submitted to them; they said it showed great consideration and kindness to the soldiers and they approved it.

So, in the case of every employee affected, great and solicitous care was taken. Notwithstanding all this, each one affected thought he had a personal grievance, claiming that others should have been demoted or dropped and pleading personal needs and personal merits. No one was willing to go and only a few were willing to be demoted.

All this made the task a very difficult as well as a sad one. It can only be said that the work was done conscientiously and impartially and with due regard to the rights of all.

The painful experience through which all have passed should impress the lesson that there is no certain tenure of employment; the Government is under no moral or legal obligation to keep employees on the pay roll when it has no work to be performed.

Each person had and has his own ideas about retirement laws and civil-service pensions, but these subjects are wholly within the province of and to be determined by the Congress. The situation could only be dealt with as it was. Other lessons are that the work of the Pension Bureau is diminishing; that the number of old soldiers and their widows is decreasing rapidly; that the act of May 11, 1912, as amended by the act of March 4, 1913, has greatly curtailed the work

to be done in their behalf; that the force now in the bureau must be still further largely reduced.

Further changes may be expected at the end of this fiscal year; circumstances will imperatively require them. Therefore employees should make such arrangements in the Government service or elsewhere as will best promote their own welfare.

* * * * *

REVOLUTIONARY WAR ARCHIVES.

The claims for pension and bounty land filed on account of services rendered during the War of the Revolution were formerly arranged by folding the papers and inclosing them in what was officially known as a jacket. Some years ago it became apparent that unless measures were taken to preserve these documents, which represented the military and family histories of the founders of our Republic, they would soon be destroyed. The frequent folding and unfolding of the papers greatly impaired their already frail condition, and many of them had been torn, mutilated and soiled. It was decided to adopt the modern method of flat filing, and the papers were placed, unfolded, in linen-lined manila envelopes. The claims were arranged alphabetically by the names of the soldiers and their widows, and when there was more than one soldier of the same name the alphabetical arrangement was extended to include the State for which service was rendered. This method of flat filing not only prevents injury from folding, but also saves time and money by facilitating reference to said records, which are open to the public under a provision in the act of Congress of March 3, 1901.

The claims had been packed very closely and arranged in bundles of 100 or more. The only manner in which a claim could be drawn from the files was by searching a set of books in which the names of the pensioners were classified alphabetically under a two-letter combination, and it took an average of half an hour to find the claim called for. As there was a constant demand for these papers, not only for the purpose of replying to letters of inquiry, but also for the use of persons calling at the bureau, it will be apparent how cumbersome the system was. The time required to draw a Revolutionary War claim under the present method of filing is from 3 to 5 minutes, saving about 25 minutes, and this is done by the clerk answering the inquiry.

Upon the completion of the work of filing, all military rolls found which belonged to the War Department under the provisions of the acts of Congress of July 27, 1892, and August 18, 1894, were forwarded to that department. All the papers belonging to the Navy Department under the provisions of the act of Congress of June 29, 1906, were forwarded to that department. On February 9, 1909, the Library of Congress received such Revolutionary War journals as they were entitled to under the act of Congress of February 25, 1903.

During the flat filing of these Revolutionary War cases all the claims were counted, with the following result:

Admitted claims:

Act of Mar. 18, 1818.....	20,396
Act of May 15, 1828.....	1,111
Act of June 7, 1832.....	32,951

Admitted claims—Continued.

Invalids.....	1,038
Widows.....	22,591
Survivors under special acts of Congress.....	126
Widows under special acts of Congress.....	53
Daughters under special acts of Congress.....	18
Total.....	72,284

Bounty land claims:

Allowed on account of Revolutionary War service.....	8,843
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Rejected claims:

Survivors.....	6,123
Widows.....	4,196
Total.....	10,319

As many of the survivors received pensions under more than one act of Congress, it was found that the actual number of pensioned soldiers was 52,504.

The first pension allowed to soldiers and sailors of the Revolution was by act of Congress for this purpose dated August 26, 1776. The records of these claims are incomplete, owing to the destruction of the papers in the War Office by fire in 1800 and 1814.

Prior to March 3, 1855, bounty land was allowed under a series of resolutions and acts of Congress to soldiers of the Revolution or their heirs, the amount of land varying according to their rank. The act of March 3, 1855, entitled soldiers and sailors or their widows or, if no widow, children under the age of 21 years at the date of said act to 160 acres of bounty land.

The last pensioned soldier of the Revolution was Daniel Frederick Bakeman, of New York, who died April 5, 1869.

The last pensioned widow of the Revolution was Esther S. Damon, widow of Noah Damon; she died November 11, 1906.

During the fiscal year ended June 30, 1914, 602 persons called at the bureau for the purpose of examining and collecting historical and genealogical data from these claims. Under the provisions of the act of August 24, 1912, 21,993 words were copied. In response to letters of inquiry, 2,454 certificates of service were furnished, 3,616 negative replies sent out, and 1,046 answers in regard to miscellaneous matters connected with the claims and relative to Revolutionary War pension and bounty land laws. In order to accomplish this work, 8,423 claims were drawn from the files.

The need for a United States hall of records is very urgent, not only for the purpose of centralizing the archives of the Government, but in order to protect them against fire, the recent burning of the New York State capitol at Albany being a signal example of that kind of destruction and emphasizing the need.

These records grow more precious every year in the estimation of those who have regard for them. Two great patriotic societies, the Sons of the American Revolution and the Daughters of the American Revolution, make frequent use of these records, and otherwise they furnish historical data as well as patriotic inspiration to the children of the Republic.

* * * * *

HISTORICAL.

PENSIONS OF THE UNITED STATES.

Besides the ordinary pay, clothing, and rations prescribed by law as a compensation for naval and military services, on the principle of wages or monthly stipend, the gratitude of Government has dictated the institution of other remunerations and rewards by way of pension.—Mayo's Pension Laws, 1833 (introduction).

It is said that the most striking feature of the pension system, which was evolved at the beginning of the Revolution and which has maintained itself throughout our military conflicts, is to be found in the resolution of the 26th of August, 1776, providing pensions for officers of the Army and Navy, and for the soldiers, seamen, and marines who might lose a limb or be otherwise disabled in the line of their duty, affecting their support; but not to exceed their half pay in cases of complete disability; and proportionally less in cases of less than complete disability.

The principle which was here first mentioned has been subsequently manifested in the various laws for like purpose passed from that time until now. In addition to pensions there were given bounties and lands.

By a resolution of June 7, 1785, Congress recommended to the several States the making of provision for the officers, soldiers, and seamen who had been disabled in the service of the United States. Immediately after the organization of the present Government the subject was attended to by the new Congress and provision made from time to time for that class of citizens until April 10, 1806, when a general law was passed, authorizing Revolutionary soldiers and seamen, including officers, disabled in the line of duty in actual service to be placed on the pension list, upon a statement from the district judge, and a report of the same by the Secretary of War to Congress for its sanction and provision. By the act of April 25, 1808, the provisions of the act of April 10, 1806, were extended to officers and soldiers of the Army and militia and volunteer corps disabled since the Revolutionary War. By act of August 2, 1813, widows and orphans of the militia and volunteers dying of wounds received in service became entitled to half the monthly pay of the deceased for five years, to cease on the death or intermarriage of the widow and death of the children. By the same act, the officers and soldiers of the militia and volunteers in service, being invalids, were to receive pensions according to the act of April 10, 1806. An act of April 16, 1816, makes further provision in relation to the same object, as well as for a commutation of bounty land for half pay to widows and orphans, and by the third section of the act of April 24, 1816, all the laws and regulations for admitting officers and soldiers of the Regular Army on the pension roll were made equally applicable to officers and soldiers of the militia while in service. Further regulations were established on the subject by the act of March 3, 1817, chiefly relating to equalizing the half pay to widows and orphans, as allowed under different laws. At length, on March 18, 1818, an act was passed authorizing all persons who had served in the Revolutionary War in the land or naval service and for as short a time as nine months, they being in indigent circumstances, to be placed on the pension list by the Secretary of War, without particular reference to

Congress, at a certain rate of pension for life. Another act was passed on May 1, 1820, restricting in some degree the operation of the preceding act. An act passed on May 15, 1828, provides that the surviving officers of the Army of the Revolution, in the Continental line, who were entitled to half pay by the resolve of October 21, 1780, shall receive the amount of full pay, according to their rank in the line, for life, from March 3, 1826, and that every noncommissioned officer, musician, or private who enlisted in the said Army for and during the War of the Revolution and continued in service until its termination, and thereby became entitled to receive a reward of \$80, under a resolve of Congress of May 15, 1778, shall receive the amount of his full monthly pay during life, from March 3, 1826. All officers and soldiers receiving pay under this act were required to be dropped from the roll of Revolutionary pensioners, which was formed under the act of May 15, 1818.

The act of March 2, 1819, again authorized the Secretary of War to pass upon claims. This was continued until the Department of the Interior was established by act of March 3, 1849.

An independent bureau was established March 3, 1833, under a Commissioner of Pensions.

The act of February 5, 1867, gave the President the power to appoint pension agents and establish agencies for the payment of pensions wherever in his judgment the public interests so required.

The act of August 17, 1912 (37 Stat., 311), provided for the establishment in the Bureau of Pensions of a disbursing office for the payment of pensions, to take the place of the 18 pension agencies.

The first pension certificate issued to a soldier for wounds received in the Army during the Civil War, under the act of April 24, 1816, was on the 12th day of August, 1861, given to Leopold Charrier, private, Company G, of the Twelfth Regiment New York State troops, and carried \$4 per month.

The first Navy invalid pension certificate granted for services in the Civil War under the act of April 23, 1800, was given to George Scott, who was a fireman on the U. S. S. *Monticello*, for an injury received in line of duty at Sewalls Point, Va., in May, 1861, and carried \$6 per month. It was issued July 31, 1861.

The first naval pension to a Civil War widow was granted Sarah F. Berryman, widow of Otway H. Berryman, who was born in Virginia. He entered the United States Navy February 2, 1829, and at the time of his death, April 2, 1861, held the rank of lieutenant commander and acting commander of the U. S. S. *Wyandotte*. His death was the result of brain fever contracted in line of duty. Sarah F. Berryman, née Frances, applied for pension July 13, 1861, as widow, alleging that she was born at Port Royal, Va.; that she was 46 years of age, and was married to this officer July 10, 1836, at Norfolk, Va. There were four children living—Columbia, Alice, Calvert, and Marsden; the last two named were twins, aged 12 years. Pension was allowed July 24, 1861, under the acts of June 30, 1834, and August 11, 1848. She died October 19, 1865.

The first pension certificate issued to a soldier's widow on account of the death of the soldier in the Civil War, under the act of July 4, 1836, was given October 25, 1861, to Caroline Ohl, widow of Martin Ohl, private of Company B, District of Columbia Volunteers, who died on the 7th day of July, 1861.

LIST OF PENSIONERS UNDER ALL LAWS, WITH POST-OFFICE ADDRESSES.

Attention is particularly called to the fact that the act of Congress of May 11, 1912, as amended, made it the duty of the Commissioner of Pensions, as each application for pension under that act was adjudicated, to cause to be kept a record showing the name, length of service, and age of each claimant, the monthly rate of payment granted to or received by him, and the county and State of his residence; and required that the commissioner should, at the end of the fiscal year 1914, tabulate the records so obtained by States and counties and furnish certified copies thereof.

The information furnished by this list has proved so desirable that the demands for copies have been numerous and are constantly growing. The fact that the list of pensioners under this law in any particular post office, county, or State may be thus easily obtained allows its use for many purposes which are apparent and satisfies many anxious inquiries.

The excellence of this record is conceded, but the fact that there is no similar list of those who receive pensions under other laws of the United States is suggested very forcibly. It is undoubtedly true that such lists of the other pensioners would be esteemed very highly.

There are also lists which include the names of all pensioners, arranged (1) by the organization in which the soldier served, (2) by the soldier's name, alphabetically, and (3) by the number of the pension certificate; but if one wishes to obtain their post-office addresses recourse must be had to records of the disbursing office, which are not arranged with reference to place of residence.

It is very much desired that a geographical list—that is, according to post offices and locality—be made of all the pensioners now on the roll. The commissioner feels that he would not be justified in undertaking the preparation of such a list without the authority and direction of Congress. It is estimated that this would require the services of 100 clerks about 260 days. Inasmuch as the work is decreasing in the Pension Bureau and reduction of the force by reason thereof should be made, if this work were authorized by Congress it could be carried out by the force now employed.

For another reason I hesitate to recommend that this work be done. It implies a suspicion that I do not entertain. Undoubtedly these lists would be published generally. If all pensioners in any community were made known, and there were any among them not entitled to pension, that fact probably would be communicated to the Government. Thus, if there were any improper claims, it might be the means of correcting them.

* * * * *

APPEALS.

During the period from May 11, 1912, to June 30, 1914, there were filed under the act of May 11, 1912, claims to the number of 544,769. Of these, 23,506 were rejected; of those rejected, 5,962 were appealed to the Secretary.

This would indicate that of those filed about 4 per cent were rejected by the bureau, and of those rejected about 25 per cent were appealed.

Of the claims for pension under laws other than the act of May 11, 1912, there were filed claims numbering 117,546. Of these there were rejected 34,096. There were appealed to the Secretary 3,691.

Of those filed 29 per cent were rejected. Of those rejected, 9 per cent were appealed. In 94½ per cent of claims appealed the decision of the bureau was affirmed, and in only 5½ per cent of cases appealed was the action of the bureau reversed.

CASES PENDING.

In the report for the fiscal year ended June 30, 1912, it was stated there were 422,464 claims pending. I was informed that these figures were ascertained by deducting (or adding, as the case might be) from the cases reported to be pending at the end of the previous year, those disposed of during the year, and the remainder would be stated to be those pending, no actual count being had.

An inventory made as of June 30, 1913, disclosed that there were on hand 83,581 pending claims. This indicated a numerical loss of about 17,000 cases; that is, considering the previous count and this last count, there were that many cases not accounted for. This was startling, and it was supposed that the actual count then made would be an excellent basis upon which to make other accurate counts in later years. Another inventory, taken as of June 30, 1914, disclosed, however, that there were still serious discrepancies.

Some of the apparent causes for the discrepancy between the number of pending claims, as shown by the daily reports of the various divisions on June 30, 1914, and the number shown by the inventory, may be mentioned as follows:

In the Civil War Division there were shown by the inventory 15,128 claims on hand, while the report of June 30 showed 23,800 claims.

During the count 3,051 claims found to have been abandoned by the claimants were sent to the abandoned files.

Claims under the act of May 11, 1912, charged to adjudicating sections as pending claims, had been disposed of by letter, returned to the admitted files, and had not been reported by the examiners to the section chief as cases charged out of the division. The aggregate of this class of claims was large.

Cases had been handled by examiners where the jackets of pending claims had been placed inside of the admitted jackets, thus taking the cases to the admitted files with no record of claims charged out of the division.

Where two or more declarations under the same law had been adjudicated on one face brief action, only one claim had been counted as charged out of the division. If each declaration was counted when received, each should have been counted as charged out of the division when submitted for action.

There seems to be some lack of accuracy in reporting the regular routine charge of cases to other divisions. The accounts of cases received by other divisions frequently do not agree with the number of cases as charged out by the records.

In the Army and Navy Division the daily report showed 5,890 cases on hand, while the inventory showed 7,566, an increase of 1,676. This difference may be accounted for by the fact that not all abandoned and rejected claims when restored to the pending files for further adjudication had been properly accounted for. Claims drawn from the admitted and abandoned files were charged out for consideration, and examiners were instructed to indicate, by slip or otherwise, such of these claims as should be restored to the pending files. These instructions had in many instances been overlooked, and as a consequence many claims got into the files without being stamped "restored" and without credit being taken therefor.

A large committee has been named, which, under the charge of the assistant chief clerk, is considering the subject for the twofold purpose of classifying claims and once having an accurate count thereunder, and also to devise some method of keeping track of the pending cases afterwards.

MISCELLANEOUS.

PAYMENT TO INMATES OF SOLDIERS' HOMES.

On October 10 and 24, 1913, the Pension Bureau made the suggestion that the pensioned inmates of certain homes or hospitals be listed, with details, on a roll, and that the proper officer of the institution make one certificate covering all pensioners therein, payment to be made by one check for the amount of the roll. The procedure required but one certificate, where there were before as many certificates as there were pensioned inmates of the particular institution.

Under the present procedure, the proper officer of the institution to whom the law authorizes the pension to be paid makes a separate certificate for each pensioner, payment being made, however, by but one check for the total amount of the certificates presented by each institution.

This not only effects a great saving of time and labor, and therefore expense to the Government, but also expedites the payments so as to give to the pensioner earlier payment of the amount of his pension on the dates when due.

MONTHLY PAYMENT OF PENSIONS.

This subject has been discussed throughout the country at large, and the old soldiers themselves have given expression to their desire in that matter. I found a great division of sentiment on the subject. At a meeting of the national encampment of the Grand Army of the Republic at Chattanooga, Tenn., in September, 1913, the commander in chief suggested that it would be a great benefit to the pensioners if their pensions could be sent to them monthly instead of quarterly. I took occasion to say to them there and elsewhere that the Secretary of the Interior was in sympathy with the old soldiers, and would be in favor of the payment of pensions monthly, if that would be helpful to them, and that the commissioner took the same stand. The cost to the Government would be no more for the pensions. For the preparation of rolls, checks, and otherwise the labor necessary for such a change would probably require an addition of from 50 to 75 clerks, and the expense, although difficult

to estimate, would amount to a large sum. Although much time has elapsed since the subject was first discussed, there seems to be no general demand among the soldiers themselves for a change in the present method.

ACT OF MARCH 3, 1899.

Since the passage of the act of March 3, 1899, providing for the division of pension of resident pensioners of the United States who desert their wives and children, or who are inmates of national or State soldiers' and sailors' homes, 15,183 claims have been filed thereunder, 8,417 of which have been allowed and 6,536 rejected, leaving 230 pending.

HIGH MARKS FOR PENSIONS, ETC.

The largest number of pensioners ever on the roll was in 1902, when they amounted to 999,446.

The highest amount paid for expenses for the payment of pensions was in the year 1892, when it reached \$4,898,665.80.

The greatest number of employees ever engaged in the service of the bureau was in the fiscal years ended 1892, 1893, and 1894, the same number being employed each of these years, when they were 2,009. The fiscal year ending June 30, 1915, provides for 1,275 employees, which is 145 less than the number provided for in the appropriation for 1914.

The number of pension certificates issued in the last 10 years is as follows:

Pension certificates issued during the last 10 years.

1905.....	185, 242	1911.....	92, 336
1906.....	136, 905	1912.....	90, 922
1907.....	236, 516	1913.....	443, 622
1908.....	328, 676	1914.....	95, 606
1909.....	123, 742		
1910.....	97, 242	Total.....	1, 830, 809

AGES OF PENSIONERS UNDER THE ACT OF MAY 11, 1912.

Ages of survivors of the Civil and Mexican Wars as shown in claims admitted under the act of May 11, 1912, from the date of the act to June 30, 1913.

Age.	Number of claims admitted.	Age.	Number of claims admitted.	Age.	Number of claims admitted.	Age.	Number of claims admitted.
62	1,893	73	20,784	84	1,697	95	8
63	5,587	74	7,764	85	1,231	96	5
64	11,735	75	26,347	86	952	97	4
65	12,702	76	13,217	87	641	98	4
66	43,273	77	10,043	88	418	99	2
67	38,944	78	8,450	89	290	100	..
68	38,101	79	6,456	90	209	101	..
69	16,942	80	5,567	91	132	102	1
70	53,569	81	4,111	92	95	103	1
71	31,411	82	3,159	93	56		
72	27,748	83	2,187	94	14		

Total number filed, 395,750.

Average age, 70.7 years.

8.1 per cent between 62 and 65 years, inclusive.

34.7 per cent between 66 and 69 years, inclusive.

35.7 per cent between 70 and 74 years, inclusive.

21.5 per cent 75 years of age and over.

This compilation was discontinued on June 30, 1913. This was because a large proportion of that class was already admitted, and, secondly, because there were then in the bureau temporarily 400 clerks whose time expired on the 30th of June, 1913, and help was lacking.

STATISTICS.

The statistics presented are roughly classified under three heads, viz:

First. Those relating to the number of pensioners on the roll and the losses and gains to the roll.

Second. Those relating to disbursements for pensions and the maintenance of the pension system.

Third. Those relating to applications filed, certificates issued, and claims allowed and pending at the close of the fiscal year.

Exhibit 14 states the amount paid the several treasurers of the soldiers' homes during the last fiscal year. This is the first time this information has been furnished in connection with the annual report of the Commissioner of Pensions. It also shows the number of inmates and also the amounts paid each quarter, which, like the other tables, may serve a valuable purpose for information and comparison.

It will be noticed that there is a discrepancy between the report for 1913 and this report in the total number of pensioners, the total being given last year as 820,200 while this year it is stated to have been 820,272. As this occurs in a number of places, the explanation is made here that the 72 pensioners of the class called "Brothers, sisters, sons, and daughters" under the general law, which were formerly carried on the New York roll, were not entered in the 1913 report for the reason that accurate information was not furnished early enough.

The figures given in the exhibits do not in all cases agree with the figures given at certain places in former reports: there are discrepancies apparent in the former reports themselves: for instance, on page 5¹ of the report of the commissioner for 1910, under the head of "General statement," is a statement of losses by "Remarriage, 969," and by "Minors attaining the age of 16 years, 929," while on page 22¹ of the same report, in a tabular statement, it is said the "Losses by remarriage" were 942, and "Minors by legal limitation" were 956. The two items total the same, but in one place or the other they are not entered correctly. Also, while not an actual discrepancy, under Exhibit 1, on page 21¹ of the report for 1910, is shown the annual value, which is predicated upon the assumption that the value of the pensions accruing each day throughout the year will equal those accruing on June 30, 1910, while the reports for subsequent years show the actual disbursements for those years. Exhibit 1 of the report for 1911, shows in the same column "Disbursements," which is the total amount paid out during the year. Each expresses a different idea, but without this explanation the difference might not always be understood.

Respectfully submitted.

GAYLORD M. SALTZGABER,
Commissioner.

The SECRETARY OF THE INTERIOR.

¹ These pages refer to the pamphlet reports of the Commissioner of Pensions.

STATISTICAL TABLES.

EXHIBIT 1.—*Pensioners on the roll June 30, 1914, and June 30, 1913.*

	1914	1913	Gain.	Loss.
Regular establishment:				
Invalids.....	14,919	14,561	358	.....
Widows.....	2,892	2,904	.....	12
Minor children.....	190	175	15	.....
Mothers.....	1,159	1,145	14	.....
Fathers.....	168	164	4	.....
Brothers, sisters, sons, and daughters.....	5	2	3	.....
Helpless children.....	8	7	1	.....
Civil war:				
Act May 11, 1912—				
Survivors.....	369,624	379,064	.....	9,440
Act Feb. 6, 1907—				
Survivors.....	7,158	16,241	.....	9,083
General law—				
Invalids.....	50,347	61,800	.....	11,453
Nurses.....	292	325	.....	33
Widows.....	56,819	60,265	.....	3,446
Minor children.....	184	195	.....	11
Mothers.....	825	1,053	.....	228
Fathers.....	98	137	.....	39
Brothers, sisters, sons, and daughters.....	353	475	.....	122
Helpless children.....	589	466	123	.....
Act June 27, 1890—				
Invalids.....	2,225	5,274	.....	3,049
Minor children.....	3,633	3,839	.....	206
Helpless children.....	458	441	17	.....
Act April 19, 1908—				
Widows without children.....	232,084	228,571	3,513	.....
Widows with children.....	3,440	4,293	.....	853
War with Spain:				
Invalids.....	24,250	24,160	90	.....
Widows.....	1,241	1,238	3	.....
Minor children.....	221	274	.....	53
Mothers.....	2,763	2,860	.....	97
Fathers.....	428	473	.....	45
Brothers, sisters, sons, and daughters.....	3	6	.....	3
Helpless children.....	4	4	.....	.....
War of 1812:				
Widows.....	170	199	.....	29
War with Mexico:				
Survivors.....	893	1,142	.....	249
Widows.....	4,699	5,123	.....	424
Indian wars:				
Survivors.....	915	1,066	.....	151
Widows.....	2,182	2,330	.....	148
Total.....	785,239	820,272	4,141	39,174

NOTE.—The total under the second column, 820,272, does not agree in number with the total of the summary shown on page 6 of the report of the Commissioner of Pensions for 1913. The explanation is that 72 pensioners, class, "Brothers, sisters, sons, and daughters" under "General law," formerly carried on the New York agency roll, were not entered in the 1913 report.

* * * * *

EXHIBIT 3.—Statement showing the number of pensioners in each class under the general pension laws and "special acts" of Congress, together with the annual value of each on the roll at the close of the fiscal year ended June 30, 1914.

Classes.	General laws.		Special acts.	
	Number.	Annual value.	Number.	Annual value.
Invalids, Regular Establishment.....	14,712	\$2,580,910.98	207	\$52,560.00
Widows, etc., Regular Establishment.....	4,026	705,516.00	396	151,024.00
Survivors, act May 11, 1912.....	369,624	94,872,297.48		
Survivors, act Feb. 6, 1907.....	7,158	1,250,934.00		
Invalids, general law.....	36,656	12,394,701.00	13,691	4,638,942.00
Nurses.....	225	32,400.00	67	11,172.00
Widows, etc., general law.....	54,682	8,282,136.00	4,186	859,864.00
Invalids, act June 27, 1890.....	2,225	295,809.00		
Minors, etc., act June 27, 1890.....	4,091	736,440.00		
Widows, act Apr. 19, 1908.....	235,524	34,026,768.00		
Invalids, War with Spain.....	23,747	3,166,804.80	503	103,842.00
Widows, etc., War with Spain.....	4,431	683,628.00	229	56,376.00
Widows, War of 1812.....	163	23,472.00	7	1,776.00
Survivors, War with Mexico.....	869	307,752.00	24	7,344.00
Widows, War with Mexico.....	4,511	649,584.00	188	30,528.00
Survivors, Indian wars.....	791	189,840.00	124	22,272.00
Widows, Indian wars.....	2,124	305,856.00	58	8,784.00
Total.....	765,559	160,504,849.26	19,680	5,944,484.00

Total number of pensioners..... 785,239

Total annual value..... \$160,449,333.26

Average annual value of each pensioner:

All classes.....	211.97
Regular Establishment.....	180.45
Act May 11, 1912.....	256.67
Act Feb. 6, 1907.....	174.76
General law, Civil War.....	239.43
Act June 27, 1890.....	163.43
Act Apr. 19, 1908.....	144.47
War with Spain.....	138.73
Survivors, Civil War.....	264.24

EXHIBIT 4.—Pensioners and amounts paid, arranged by States, insular possessions, Canal Zone, and foreign countries, during the fiscal year ended June 30, 1914.

State or Territory.	Number.	Amount.	State or Territory.	Number.	Amount.
Alabama.....	3,094	\$679,689.92	North Carolina.....	3,478	\$764,047.04
Alaska.....	77	16,915.36	North Dakota.....	2,807	616,641.76
Arizona.....	857	188,265.76	Ohio.....	74,250	16,312,133.60
Arkansas.....	8,436	1,853,220.48	Oklahoma.....	10,916	2,398,026.88
California.....	27,742	6,094,362.56	Oregon.....	7,469	1,640,789.92
Colorado.....	7,709	1,693,513.12	Pennsylvania.....	72,407	15,907,263.36
Connecticut.....	9,581	2,104,754.08	Rhode Island.....	4,293	943,086.24
Delaware.....	2,491	547,222.88	South Carolina.....	1,623	356,540.64
District of Columbia.....	8,607	1,890,785.76	South Dakota.....	5,164	1,134,427.52
Florida.....	4,870	1,069,841.60	Tennessee.....	16,239	3,567,383.52
Georgia.....	2,869	600,261.92	Texas.....	8,047	1,767,704.96
Idaho.....	2,150	472,312.00	Utah.....	9,983	215,945.44
Illinois.....	54,078	11,880,748.64	Vermont.....	6,264	1,376,075.52
Indiana.....	47,858	10,514,339.04	Virginia.....	8,841	1,832,350.88
Iowa.....	26,647	5,853,812.96	Washington.....	9,522	2,091,792.96
Kansas.....	31,017	6,814,400.76	West Virginia.....	10,170	2,234,145.60
Kentucky.....	20,449	4,492,236.32	Wisconsin.....	18,941	4,160,958.88
Louisiana.....	5,146	1,130,473.28	Wyoming.....	804	176,622.72
Maine.....	13,659	3,000,609.12	Total.....	779,908	171,337,455.61
Maryland.....	11,914	2,617,267.52	Canal Zone, total.....	1	240.00
Massachusetts.....	32,675	7,178,401.08	INSULAR POSSESSIONS.		
Michigan.....	32,842	7,215,087.65	Guam.....	2	504.00
Minnesota.....	12,167	2,672,846.56	Hawaii.....	72	15,816.96
Mississippi.....	3,840	843,571.20	Philippines.....	58	12,741.44
Missouri.....	37,804	8,305,676.32	Porto Rico.....	35	7,688.40
Montana.....	2,264	497,355.52	Total.....	167	36,750.80
Nebraska.....	13,758	3,022,357.44			
Nevada.....	382	83,997.76			
New Hampshire.....	6,283	1,380,249.44			
New Jersey.....	19,739	4,336,858.72			
New Mexico.....	1,816	398,938.88			
New York.....	65,369	14,361,155.52			

EXHIBIT 4.—*Pensioners and amounts paid, arranged by States, insular possessions, Canal Zone, and foreign countries, during the fiscal year ended June 30, 1914—Contd.*

State or Territory.	Number.	Amount.	State or Territory.	Number.	Amount.
FOREIGN COUNTRIES.			FOREIGN COUNTRIES— continued.		
Algeria.....	1	\$144.00	Italy.....	59	\$15,967.44
Argentina.....	12	2,598.00	Japan.....	34	6,732.00
Australia.....	98	20,802.00	Liberia.....	7	1,380.00
Austria-Hungary.....	35	6,156.00	Luxemburg.....	3	432.00
Azores.....	5	1,104.00	Malta.....	2	288.00
Bahamas.....	3	720.00	Mexico.....	75	13,662.00
Barbados.....	2	288.00	Morocco.....	1	144.00
Belgium.....	21	5,104.32	Netherlands.....	14	2,784.00
Bermuda.....	7	1,008.00	Newfoundland.....	5	858.00
Bolivia.....	1	180.00	New Zealand.....	20	4,086.00
Brazil.....	6	1,404.00	Nicaragua.....	2	324.00
British West Indies.....	8	1,998.00	Norway.....	69	12,659.94
Bulgaria.....	2	360.00	Panama.....	3	444.00
Canada.....	2,692	529,620.00	Peru.....	10	1,800.00
Cape de Verde Islands.....	1	96.00	Portugal.....	5	1,296.00
Chile.....	11	3,030.00	Russia.....	10	2,040.00
China.....	18	4,097.16	Samoa.....	1	96.00
Colombia.....	1	144.00	San Salvador.....	1	216.00
Comoro Islands.....	1	120.00	Scotland.....	75	14,750.16
Costa Rica.....	3	702.00	Seychelles Islands.....	1	144.00
Cuba.....	42	9,054.00	Sierra Leone.....	1	180.00
Danish West Indies.....	1	144.00	Society Islands.....	1	288.00
Denmark.....	48	9,510.00	South Africa.....	12	2,832.00
Dominican Republic.....	1	144.00	Spain.....	6	1,128.00
Dutch West Indies.....	4	744.00	St. Helena.....	1	144.00
England.....	464	97,998.00	Sweden.....	75	14,618.88
Egypt.....	1	144.00	Switzerland.....	69	14,202.00
Finland.....	7	1,500.00	Tasmania.....	1	276.00
France.....	88	20,918.00	Tonga Islands.....	1	216.00
Germany.....	504	96,204.00	Trinidad.....	2	372.00
Greece.....	9	1,320.00	Turkey in Asia.....	15	2,886.00
Guatemala.....	4	732.00	Turkey in Europe.....	2	330.00
Honduras.....	6	1,512.00	Uruguay.....	3	648.00
Hongkong.....	4	797.88	Venezuela.....	1	144.00
India.....	12	1,926.00	Wales.....	29	5,592.00
Ireland.....	415	85,814.10			
Isle of Man.....	1	240.00			
Isle of Pines.....	8	1,764.00			
			Total.....	5,163	1,034,071.88

SUMMARY.

	Pensioners.	Payments.
Pensioners residing in States and Territories and payments to them.....	779,908	\$171,337,455.61
Pensioners residing in insular possessions and Canal Zone and payments to them.....	168	36,990.80
Pensioners residing in foreign countries and payments to them.....	5,163	1,034,071.88
Total.....	785,239	172,408,518.29
Payments by Treasury Department (Treasury settlements).....		9,027.97
Total payments on account of Army and Navy pensions, 1914.....		172,417,546.26

EXHIBIT 5.—*Comparative table of number of pensioners of the different wars on the roll at the close of the last 5 fiscal years.*

	1914	1913	1912	1911	1910
Civil War.....	728,129	762,439	801,998	833,756	862,852
War with Spain.....	28,910	29,015	28,850	28,490	27,889
War of 1812.....	170	199	238	279	338
War with Mexico.....	5,592	6,265	6,846	7,621	8,401
Indian wars.....	3,097	3,396	3,649	4,016	4,382
Regular Establishment.....	19,341	18,958	18,713	17,936	17,221
Total.....	785,239	820,272	860,294	892,098	921,083

* * * * *

EXHIBIT 16.—*Special acts.*

Since 1861 there have been allowed by special acts of Congress 43,231 pensions and increases of pensions, of which 19,680 are now on the roll, with an annual face value of \$5,944,484. Only a part of this is properly chargeable to special acts, as most of the beneficiaries had been previously pensioned under general laws at lower rates.

From June 30, 1913, and thereafter during the Sixty-third Congress, 894 persons were included in the special acts passed at the rates specified in the summary following:

Pensions granted by special act during the Sixty-third Congress subsequent to June 30, 1913.

Rates specified.	Number granted.	Rates specified.	Number granted.
\$50.....	59	\$12.....	145
\$40.....	74	\$10.....	3
\$36.....	47	Inoperative:	
\$35.....	2	\$50.....	5
\$30.....	213	\$40.....	3
\$25.....	5	\$36.....	2
\$24.....	105	\$30.....	190
\$21.....	1	\$24.....	6
\$20.....	192	\$20.....	4
\$17.....	2	Total.....	894
\$16.....	5		
\$14.....	1		

Of the above, 153 were granted to persons not in receipt of a pension and 741 to persons then receiving smaller pensions.

The annual value of said special-act pensions is \$269,592, and the annual increase due to the same is \$115,872.

The following statement shows the number of pensions and increases of pensions granted by special acts during each Congress since March 4, 1861:

Number of pensions granted by special acts each Congress since Mar. 4, 1861.

Thirty-seventh (1861-1863).....	12	Fifty-second (1891-1893).....	217
Thirty-eighth (1863-1865).....	27	Fifty-third (1893-1895).....	119
Thirty-ninth (1865-1867).....	138	Fifty-fourth (1895-1897).....	378
Fortieth (1867-1869).....	275	Fifty-fifth (1897-1899).....	694
Forty-first (1869-1871).....	85	Fifty-sixth (1899-1901).....	1,391
Forty-second (1871-1873).....	167	Fifty-seventh (1901-1903).....	2,171
Forty-third (1873-1875).....	182	Fifty-eighth (1903-1905).....	3,355
Forty-fourth (1875-1877).....	98	Fifty-ninth (1905-1907).....	6,030
Forty-fifth (1877-1879).....	230	Sixtieth (1907-1909).....	6,600
Forty-sixth (1879-1881).....	96	Sixty-first (1909-1911).....	9,649
Forty-seventh (1881-1883).....	216	Sixty-second (1911-1913).....	6,350
Forty-eighth (1883-1885).....	598	Sixty-third (1913 to June 30, 1914).....	894
Forty-ninth (1885-1887).....	856		
Fiftieth (1887-1889).....	1,015	Total.....	43,231
Fifty-first (1889-1891).....	1,388		

EXHIBIT 17.—*Classification of claims pending June 30, 1914.*

	Total.	Invalid.			Widows and dependents.			Service pensions.		
		Orig-inal.	Re-issue.	In-crease.	Orig-inal.	Re-issue.	In-crease.	Orig-inal.	Re-issue.	In-crease.
Civil War:										
General law.....	3,246	126	254	1,785	1,037	20	21	3		
Act June 27, 1890.....	1,176				928		18	128		102
Act Mar. 3, 1901.....	203				203					
Act Feb. 6, 1907.....	151							109	22	20
Act May 11, 1912.....	8,529							795	1,979	5,755
Act Apr. 19, 1908.....	6,699				6,699					
Total, Civil War.....	20,004	126	254	1,785	8,867	20	39	1,035	2,001	5,877
Regular Establishment.....	2,952	1,917		603	432					
War with Spain.....	4,447	3,357		744	346					
Mexican War.....	63				61			2		
Indian wars.....	43				40			3		
Old wars.....	2				2					
Bounty land.....	10							8	2	
Grand total.....	27,521	5,400	254	3,132	9,748	20	39	1,048	2,003	5,877

Special acts:	
Invalid.....	196
Widows.....	115
Minors.....	9
Dependents.....	4
	324
Act of Mar. 3, 1899—deserted wives.....	297
Act of Mar. 2, 1895—reimbursement.....	1,349
Cases before Board of Pension Appeals.....	2,550
Cases before Pension Committees of Congress:	
Invalid.....	429
Widows, etc.....	121
	550

EXHIBIT 18.—*Total numbers of issues on account of all claims allowed since the establishment of the pension system.*

[To include June 30, 1914.]

Original invalid claims allowed:

Revolutionary War soldiers pensioned.....	52,504
Old war, prior to Mar. 4, 1861.....	9,486
Since Mar. 4, 1861.....	1,164,876
War of 1812.....	25,723
Mexican War.....	20,665
Indian wars.....	6,440
Navy (prior to merging with Army series of numbers).....	42,035
Total.....	1,321,729

Reissues and increases:

Revolutionary soldiers.....	2,992
Army invalids (approximated).....	3,517,549
Navy invalids (approximated).....	126,883
Mexican survivors (approximated).....	20,667
Total.....	3,668,092
	4,989,820

Original widow claims allowed:

Revolutionary War widows pensioned.....	22,644
Revolutionary War daughters pensioned (special acts).....	18
Old war, prior to Mar. 4, 1861.....	8,037
Since Mar. 4, 1861.....	777,733
War of 1812.....	35,520
Mexican War.....	16,025
Indian wars.....	8,175
Navy (prior to merging with Army series of numbers).....	21,618
Total.....	889,770

Reissues and increases:

Widows, act Mar. 3, 1901 (approximated).....	11,751
Widows, all other acts (approximated).....	50,191
Total.....	61,942
	951,712

Approximated number of issues on account of all claims allowed:

Invalids.....	4,989,820
Widows.....	951,712
Total.....	5,941,532

EXHIBIT 19.—Table showing operations of the Special Examination Division, number of examinations made, cost thereof, etc., during the fiscal years 1910 to 1914, inclusive.

	1910	1911	1912	1913	1914
Appropriated to field service.....	\$225,000.00	\$215,000.00	\$215,000.00	\$215,000.00	\$215,000.00
Expended.....	200,367.61	193,248.21	213,384.90	157,020.38	109,305.97
Available balance at close of fiscal year.....	24,632.39	21,751.79	1,615.10	57,979.62	105,694.03
Average number of examiners employed.....	123	121	124	94	65
Number of depositions taken.....	73,240	58,562	60,320	49,644	38,705
Average number of depositions per examiner.....	595	484	486	528	595
Average cost per deposition.....	\$2.73	\$3.30	\$3.54	\$3.16	\$2.82
Number of reports submitted.....	15,017	11,920	11,980	10,550	8,503
Average number of reports per examiner.....	122	99	97	112	131
Average cost of report.....	\$13.34	\$16.21	\$17.81	\$14.88	\$12.85
Review:					
Reports reviewed and referred for further examination.....	8,302	6,487	6,020	5,363	4,898
Reports reviewed and submitted to Board of Review.....	862	873	941	787	2,120
Reports reviewed and submitted to other divisions.....	159	169	186	160	474
Total number of reports reviewed in division.....	9,323	7,529	7,147	6,310	7,492
Cases:					
Number in division at beginning of fiscal year.....	3,486	2,823	2,926	2,794	2,226
Received during the year.....	6,254	5,813	5,517	4,633	3,740
	9,740	8,636	8,443	7,427	5,966
Submitted to Board of Review.....	5,439	4,469	4,448	4,139	3,266
Submitted to Law Division.....	874	963	871	757	502
Submitted to other divisions.....	604	278	330	305	339
	6,917	5,710	5,649	5,201	4,107
Remaining in division at close of fiscal year.....	2,823	2,926	2,794	2,226	1,859

NOTE.—The number of special examiners in 1914 was 47 per cent less than in 1910; 46 per cent less than in 1911; 47 per cent less than in 1912, and 30 per cent less than in 1913. The travel requirements of the individual examiner were relatively increased in 1914.

The average number of depositions per examiner in 1914 was the same as in 1910; 18 per cent more than in 1911 and 1912, and 11 per cent more than in 1913.

The average cost per deposition in 1914 was 3 per cent more than in 1910; 14 per cent less than in 1911; 20 per cent less than in 1912, and 10 per cent less than in 1913.

The average number of reports per examiner in 1914 was 7 per cent more than in 1910; 25 per cent more than in 1911; 26 per cent more than in 1912, and 15 per cent more than in 1913.

The average cost per report in 1914 was 5 per cent less than in 1910; 21 per cent less than in 1911; 28 per cent less than in 1912, and 13 per cent less than in 1913.

REPORT OF THE COMMISSIONER OF PATENTS.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., October 1, 1914.

SIR: I have the honor to submit herewith the following report of the business of the United States Patent Office for the fiscal year ended June 30, 1914:

Applications received during fiscal year ended June 30, 1914.

Applications for patents for inventions.....	69,311
Applications for patents for designs.....	2,441
Applications for reissues of patents.....	189
Applications for registrations of trade-marks.....	8,146
Applications for registrations of labels.....	1,016
Applications for registration of prints.....	436
Total applications.....	81,539
Disclaimers.....	20
Appeals on the merits.....	1,696
Total applications, disclaimers, and appeals.....	83,255

Applications for patents for inventions.

Year ended June 30—		Year ended June 30—	
1905.....	52,323	1910.....	63,365
1906.....	55,619	1911.....	65,154
1907.....	56,514	1912.....	69,236
1908.....	58,527	1913.....	67,986
1909.....	62,800	1914.....	69,311

Applications for patents, including reissues, designs, trade-marks, labels, and prints.

Year ended June 30—		Year ended June 30—	
1905.....	66,228	1910.....	72,533
1906.....	68,881	1911.....	74,677
1907.....	66,795	1912.....	79,747
1908.....	68,441	1913.....	78,411
1909.....	73,026	1914.....	81,539

Applications awaiting action.

June 30—	
1910.....	14,575
1911.....	17,809
1912.....	21,059
1913.....	27,328
1914.....	22,283

Patents withheld and patents expired.

	1913	1914
Letters patent withheld for nonpayment of final fees.....	7,856	8,010
Applications allowed awaiting payment of final fees.....	14,612	19,234
Patents expired.....	21,427	22,398

Patents granted and trade-marks, labels, and prints registered.

Class.	1910	1911	1912	1913	1914
Letters patent.....	36,387	33,513	34,220	35,025	36,276
Design patents.....	629	777	1,148	1,579	1,773
Reissue patents.....	142	138	171	150	176
Trade-marks.....	4,342	3,791	4,635	5,166	5,795
Labels.....	176	576	625	664	720
Prints.....	59	181	268	254	339
Total.....	41,635	38,976	41,067	42,838	45,080

Receipts from all sources, fiscal year ended June 30, 1914.

Applications, first fees.....	\$1,037,900.35
Designs.....	\$40,085.00
Reissues.....	5,640.00
Trade-marks.....	81,064.00
Final fees.....	730,181.90
Appeals.....	19,879.20
Disclaimers.....	220.00
Coupons.....	54,937.71
Drawings.....	5,453.82
Recording assignments.....	33,345.05
Labels.....	5,413.00
Court costs.....	20.00
Copies of records.....	137,616.00
Prints.....	2,352.00
Unapplied.....	236.52
Official Gazette and other publications.....	15,614.40
Total receipts.....	2,169,988.95

Expenditures, fiscal year ended June 30, 1914.

	Expended.	Estimated liabilities.	Total.
Salaries.....	\$1,300,251.46		\$1,300,251.46
Scientific library.....	1,279.62	\$1,201.89	2,481.51
Law library.....	314.69	116.38	431.07
Postage on foreign mail.....	1,125.00		1,125.00
Stationery.....	11,123.12		11,123.12
Furniture and sundries.....	11,632.10		11,632.10
Ice.....	267.99		267.99
Washing towels.....	176.36		176.36
Winding clocks.....	186.96		186.96
Telephones.....	831.61		831.61
Telegraphing.....	52.98		52.98
Traveling expenses.....	32.65		32.65
Investigating public use.....	497.76		497.76
Photolithographing, paid contractor.....	105,631.78		105,631.78
Photographic printing, paid contractor.....	5,318.43		5,318.43
Photo-stal machine and supplies.....	3,660.49		3,660.49
Printing old specifications, paid Public Printer.....	6,732.13		6,732.13
Printing and binding:			
Official Gazette and indexes.....	145,046.13		145,046.13
Specifications.....	294,878.28		294,878.28
Miscellaneous.....	29,097.37		29,097.37
International Convention for Protection of Industrial Property.....		750.00	750.00
Fixed charges.....	8,927.34		8,927.34
Total.....	1,927,064.25	2,068.27	1,929,132.52

Receipts and expenditures.

Receipts from all sources.....	\$2, 169, 988. 95
Expenditures.....	1, 929, 132. 52
Net surplus.....	240, 856. 43
Total net surplus to date.....	7, 530, 960. 20

Comparative statement.

June 30—	Receipts.	Expenditures.	June 30—	Receipts.	Expenditures.
1903.....	\$1,591,251.04	\$1,423,094.40	1909.....	\$1,975,919.97	\$1,887,443.35
1904.....	1,663,879.99	1,469,124.40	1910.....	2,022,043.26	1,953,549.78
1905.....	1,737,334.44	1,472,467.51	1911.....	1,987,778.58	1,957,001.85
1906.....	1,811,297.84	1,538,149.40	1912.....	2,094,059.50	2,019,236.01
1907.....	1,859,592.89	1,584,489.70	1913.....	2,082,490.23	1,924,459.42
1908.....	1,874,180.75	1,608,292.01	1914.....	2, 169, 988. 95	1, 929, 132. 52

Appellate work.

Interferences declared.....	1,702
Interferences disposed of before final hearing.....	1,235
Interferences heard.....	267
Interferences disposed of.....	271
Interferences awaiting decision.....	29

Oldest case awaiting action, Feb. 3, 1914.

Appeals to examiners in chief in interference cases.....	147
Ex parte appeals to examiners in chief.....	799
Total.....	946

Appeals in interference cases disposed of.....	125
Ex parte appeals disposed of.....	647
Total.....	772

Interference cases awaiting action.....	22
Ex parte cases awaiting action.....	152
Total.....	174

Oldest interference case awaiting action, Apr. 28, 1914.

Oldest ex parte case awaiting action, May 20, 1914.

Appeals to commissioner in interference cases.....	137
Appeals to commissioner in opposition cases.....	32
Appeals to commissioner in cancellations.....	8
Ex parte appeals to commissioner.....	182
Interlocutory appeals to commissioner.....	263
Ex parte appeals in trade-mark cases.....	134
Total.....	756
Petitions to commissioner.....	2,728
Total.....	3,484

Cases disposed of by commissioner:

Appeals in interference cases.....	140
Appeals in opposition cases.....	24
Appeals in cancellation cases.....	5
Ex parte appeals.....	198
Interlocutory appeals.....	260
Ex parte appeals in trade-mark cases.....	94
Total.....	721

Petitions to commissioner.....	2, 691
Total.....	<u>3, 412</u>
Appeals to Court of Appeals, District of Columbia:	
Ex parte cases.....	15
Interference cases.....	50
Opposition cases.....	10
Cancellation cases.....	2
Total.....	<u>77</u>

During the year 2,779,205 printed copies of patents were sold, bringing to the office a revenue of \$123,571.55, an increase of 13.04 per cent in the number, and an increase of 9.4 per cent in the amount, over the year 1913. Although the cash received from the sale of coupons during the year amounted to but \$54,937.71, the larger part of these copies of patents were furnished upon cash orders, being entered as "Copies of records." In addition to the foregoing, 895,744 copies of patents were shipped to foreign countries, and 175,586 furnished for governmental use.

The office received for record 31,756 deeds of assignment, for which the sum of \$50,001.05 was received, together with \$1,990 as fees for abstracts of title. The apparent discrepancy in the statement on page 270, that \$33,345.05 were received for recording assignments, is explained by the fact that many of these assignments were charged to accounts, the money having been entered under "Copies of records."

Typewritten copies of records, aggregating 29,100,500 words, were furnished, for which the office received the sum of \$29,100.50, and for certificates attached thereto the sum of \$1,370.25. Twenty thousand two hundred and thirty-two photostat copies of foreign patents were sold at 15 cents each and 19,038 photostat copies at 25 cents each.

The number of letters constituting the miscellaneous correspondence received and indexed during the year was 264,153. While 71,941 applications for patents, design, and reissues were filed, there were also filed during the year 202,054 amendments in pending applications.

The work of printing the specifications of patents issued prior to 1860 was inaugurated in 1909 and has just been completed, so that the office can now furnish printed copies of the specifications of all patents issued since 1836.

Respectfully submitted.

THOMAS EWING,
Commissioner of Patents.

THE SECRETARY OF THE INTERIOR.

STATEMENT OF THE COMMISSIONER OF EDUCATION.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, August 31, 1914.

SIR: I have the honor to submit the following statement of the operations of this office for the fiscal year ended June 30, 1914:

HIGHER EDUCATION.

The division of higher education studied recent developments in the universities of England, Ireland, Scotland, and Wales; the preparation of teachers for secondary schools in Germany, France, and England; science teaching in the secondary schools of the United States; and standards of universities, colleges, normal schools, and secondary schools in the United States. A representative of the bureau spent one or more weeks at each of the more important universities of the British Isles. Dr. Charles H. Judd, of the School of Education, University of Chicago, who held the position of specialist in higher education for several months at the beginning of the fiscal year, visited schools for the preparation of secondary teachers in Germany, France, and England, and made a careful investigation of their courses of study, both academic and professional, and of their examinations and standards of qualification. Dr. Otis W. Caldwell, of the University of Chicago, held a temporary appointment in the division, and made a personal inspection of the teaching of science in some of the more important schools in the Southern States. Dr. S. P. Capen, of Clark University, was given a permanent appointment as specialist in higher education and assigned to this division as chief of the division February 1, 1914. Since that time he has directed the routine work of the division; has visited and inspected 29 colleges and universities; at the request of The Adjutant General of the War Department, he has rendered a decision as to the eligibility of about 350 universities, colleges, and schools for inclusion in the list of institutions to be accredited by the United States Military Academy; and he has attended and taken part in 10 educational conferences of associations interested in higher education. In person or by correspondence he has consulted with the representatives of all the large national associations directly interested in higher education as to the best methods of listing colleges and universities in respect to their standards and efficiency; and with the cooperation of these associations has begun the organization of a committee which will be helpful in this work. He has cooperated with a committee of the Association of Collegiate Registrars in a criticism and reconstruction of methods of recording college activities and the statistical forms of the Bureau of Education. At the request of several colleges, he has begun the preparation of a scheme for the tabulation of the college curriculum. The completion of this will enable the Bureau of Education to determine with greater facility questions relating to the quality and standing of any given institution of higher education. He has begun a series of higher-education letters to be multigraphed and sent to universities, col-

leges, normal, professional, and technical schools. Nine of these letters were prepared and mailed before the end of the fiscal year.

This division examined and certified as to the accuracy of the reports of the land-grant colleges receiving aid under the acts of Congress of August 30, 1890, and March 4, 1907; made a special examination of the methods of accounting in use in three land-grant colleges for Negroes, and as a result of this examination is suggesting for all the institutions of this class a more efficient method of accounting. Six land-grant colleges were visited, and, at the request of the officials of the college, one of these institutions was inspected by the division, and a detailed report of its finding was made to the institution.

The position of specialist in land-grant college statistics was made vacant by the resignation of F. B. Jenks in September. In January Mr. John H. Higson, an expert accountant, was given a temporary appointment in this position and assigned to the duty of inspecting the accounting of the colleges referred to above. In April the position was filled by the temporary appointment of Benjamin F. Andrews, formerly secretary of the University of Porto Rico. Constant changes in this position interfered very much with the effectiveness of the work. There is little probability that efficient men can be retained in the position long at a time at the present salary.

SCHOOL ADMINISTRATION.

Within the year the division of school administration collected and prepared for publication important statistics in regard to school administration in 1,300 towns and cities having a population between 2,500 and 30,000. It also collected and compiled information in regard to school savings banks, information on departmental teaching, and information in regard to the duties and work of superintendents in small cities. It prepared for publication as bulletins of the bureau manuscripts on: Compulsory Attendance; Special Features in City Schools; Legislation and Judicial Decisions in 1910-1912; Legislation and Judicial Decisions in 1913; and Administration of State Systems of Education. It collected and compiled material for the chapter on "School legislation and school administration" in the Report of the Commissioner of Education for 1913. The division began a digest of the school laws of all the States and completed this work for 10 States before the end of the fiscal year. The whole will, when completed, be published as a bulletin of the bureau.

This division issued 16 circular letters on various phases of city-school work and 6 circular letters of information on important school legislation considered and enacted during the year. In response to requests from school officers it compiled information on many different phases of school administration. The principal school officers of all cities having a population of 2,500 or over were asked to send to the bureau all publications pertaining to public schools, and 1,500 reports, courses of study, rules and regulations, and documents were received, catalogued, and filed. A few of the reports have been indexed. The chief of this division visited and

studied the schools of 22 cities in 10 different States; assisted in making an extensive survey of the schools of the city of Ogden, Utah; prepared several papers and addresses for State educational meetings, round-table conferences, and teachers' institutes; and, at their request, conferred with school boards on problems of school administration.

The routine work of the division included attending to daily correspondence, keeping files, and selecting and forwarding books on different phases of school work.

SCHOOL HYGIENE AND SANITATION.

The division of school hygiene consisted this year of a special agent located in Nashville, Tenn., giving to the service of the bureau a little more than half his time, and a clerk in the office at Washington. This separation, made necessary by the law in regard to employees paid from lump-sum appropriations, has made the work of the division more difficult and less effective than it might otherwise have been. Nevertheless, a large amount of valuable work has been done. During the month of August the special agent acting as head of the division assembled and installed Part I of the scientific exhibit of the Fourth International Congress on School Hygiene held at Buffalo, N. Y. This part of the exhibit received much attention from people from all parts of the world, and the permanent international committee of the congress voted to recommend that the work just started be continued in future congresses. The division prepared for publication the chapter on "Health teaching in the United States" for the Report of the Commissioner of Education, and has prepared a bulletin on Methods and Means of Health Teaching in the United States, and another on Buildings and Grounds for Rural Schools. The division is now engaged in the preparation of the following bulletins: Open Air Schools (in cooperation with S. C. Kingsley); School Baths (in cooperation with L. N. Le Garde); supplement to Bulletin 1910, No. 5, American Schoolhouses; and a Bibliography on School Hygiene, including summaries of scientific work gathered for the Fourth National Congress on School Hygiene. Cardboard models of rural schoolhouses were sent on request to many school boards and exhibited at a number of educational associations. The demands for these models have been so numerous that they have been much worn in transportation and have had to be repaired. New models will be needed for next year. The value of these models in calling attention to the urgent need of better school buildings has been great.

The division rendered much valuable assistance to school officials in different parts of the country in regard to plans of schoolhouses and grounds. For this purpose the chief of the division visited a number of cities and towns in different parts of the country. The division continued the work already begun of making a card catalogue of an annotated bibliography on school hygiene. This work has been much delayed from lack of sufficient stenographic help. The division also prepared card directories of county health officers in the United States, of more than 5,000 foreign hygienists, and is

now completing a card catalogue of American hygienists. It also prepared a large catalogue of open-air schools; collected a large number of photographs, reports, and pamphlets; indexed periodicals for card catalogues; and kept up the routine correspondence.

RURAL EDUCATION.

The division of rural education consists of four specialists in rural education, assisted by about 60 special collaborators, who receive only a nominal salary from the bureau. These special collaborators are men and women in different parts of the country, connected with the rural-school division of State departments of education or engaged as inspectors of rural schools, investigators in normal schools, or professors of education in colleges and universities. They are helpful to the bureau in obtaining general information and in making special investigations in regard to rural schools.

The position of chief of the field service, made vacant by the resignation of the occupant June 30, 1913, has not been filled. An additional specialist, however, has been appointed. This specialist, in the seven months that he has been in office, has devoted most of his time to the study of rural education in the Southern States and in conference with State, county, and local authorities in these States. He has attended conferences in Alabama, Arkansas, Georgia, Kansas, Kentucky, Louisiana, Mississippi, Nebraska, Tennessee, Virginia, Maryland, and other States. He has studied school surveys of Ohio, Vermont, and Wisconsin; prepared and distributed the Report of the Proceedings of the National Conference of State Supervisors and Inspectors of the Rural Schools held at Louisville, Ky., under the direction of the Bureau of Education.

One specialist spent most of the year in the States of the Rocky Mountains and the Pacific coast. In Utah he studied the relative merits of county supervision and district supervision in two adjacent counties and the organization of schools in agricultural villages and small towns. He studied the rural high schools of this section and the means adopted for bringing schools and homes into closer cooperation. He visited 300 rural schools and attended 100 meetings of parent-teacher associations and school-improvement leagues and also attended 48 meetings of State and county associations and institutes.

Another specialist spent the year in the Middle West, visited schools, and attended meetings of teachers and school officers in Colorado, Mississippi, Louisiana, and Texas. He has prepared reports of his investigations in Minnesota, Colorado, and Illinois, and he has also prepared, for publication, four bulletins on the Danish rural schools, giving the results of the personal investigation of these schools made by himself and two special collaborators of the bureau in the spring of 1913.

The fourth specialist devoted much of his time through the first half of the year to the examination of the reports of the agricultural and mechanical colleges made to this office of the expenditures of the Morrill and Nelson funds. This work was assigned to him because of the temporary vacancy in the position of specialist in land-grant college statistics. He also prepared the chapter on "Progress

in rural education" for the Annual Report of the Commissioner of Education for 1913; made a study of consolidated schools and public transportation, and prepared the results of this study for publication as a bulletin of this bureau. He assisted in the preparation of reports on education in the Appalachian Mountains and on special work of county superintendents. In March, April, and May he visited the British Isles and made a study of rural education in England, Scotland, and Ireland, with special reference to continuation-school work in rural communities, agricultural education and education for home making in regular and special schools.

All of these specialists attended State, county, and local meetings of school officers, teachers, and citizens held in different parts of the country for the discussion and consideration of the organization, management, and support of rural schools.

The division has prepared, and has in circulation, nine duplicate sets of lantern slides on "consolidated and rural schools" and "transportation at public expense." Each set is accompanied by a typewritten outline lecture and by printed material for further information. These slides have been sent to county superintendents and others interested in rural schools. They have been in constant use, and many more such sets are needed to supply requests for them.

The division has issued a weekly rural school letter, which is sent to all State, county, and township superintendents, rural-school inspectors, and others who have to do with the administration of rural schools. These letters are made up of brief reports of interesting experiments and developments in the work of rural schools.

The correspondence of the division increases rapidly and is now of such volume as to require all the time of one specialist. The requests for the presence of specialists at educational meetings, for special consultation, and for assistance in State and county surveys and campaigns for education are becoming more numerous. With the number of specialists in this division, the bureau can respond to only a small per cent of these requests.

KINDERGARTEN.

The kindergarten division of this bureau, established little more than a year ago with the cooperation of the National Kindergarten Association, has already developed into an important agency for the promotion of the education of young children. There are in the United States approximately 4,000,000 children between the ages of 4 and 6, which is ordinarily considered the kindergarten age. While some form of education in the kindergarten or elsewhere would be helpful for all or most of these, the home conditions of at least half of them are such as to make the demand for such education for them imperative. Only about 300,000 of these children are enrolled in the public and private kindergartens and probably not more than two or three thousand in Montessori schools and other schools for the education of children under the public-school age. There is little hope of reaching these children except by making the kindergarten a part of the public-school system in every city, town, and village. By doing this, not only would two years be added to the period of education of millions of children whose educational

life must at best be all too short, but a beginning in the formation of moral and social habits could be made, not possible later, and much could be added to the individual development of the children in these very important years of their lives. The kindergarten has a special and unique value for the hundreds of thousands of foreign-born children and children of recent immigrants to this country and for negro children.

During the year this division made a survey of public and private kindergartens and kindergartens in manufacturing villages and in benevolent institutions in the United States. The results of this survey have been published as a bulletin of the bureau. With the assistance of a committee of 20 experts, the division made a study of all the kindergarten training schools of the country, about 200 in number, and is preparing the results of this study for publication. The division also made studies and digests of the work of the kindergarten and primary grades of the public schools. In this study it made inquiries as to the double sessions in 92 cities. Primary teachers in 114 and kindergarten teachers in 40 cities were asked for information and opinions as to changes needed in the kindergarten work and in the primary grades. The results of this study will be published as a bulletin of the bureau. The division has also collected from training teachers, supervisors, and directors of kindergartens and others, photographs and plans of kindergarten buildings, and equipment for kindergarten classes, and is preparing this material for publication as a bulletin of the bureau. The division has made a digest of the laws pertaining to public-school kindergartens and the qualifications of kindergarten teachers in the 48 States. Approximately 2,500 letters have been written, principally in reply to requests for information in regard to State laws relating to kindergartens, methods of creating public sentiment for the extension of kindergarten work, plans of buildings and equipment for kindergartens, location of training schools for kindergarten teachers, the value of the kindergarten as a part of the public-school system, the relative value of the single and double daily sessions for kindergartens, the difference between the kindergarten and the Montessori schools for small children, etc. More than 65,000 circulars and leaflets on the value of the kindergarten and various phases of its work have been distributed. Five thousand reprints of an article by Mrs. Bertha Hofer-Hegner on Home Activities in the Kindergarten were mailed to as many kindergartners in cities, towns, and villages. A kindergarten exhibit was made at several expositions and State fairs and at the meetings of educational associations. Two lantern-slide lectures on kindergartens were circulated; speakers were sent to conventions, and on request assisted in campaigns for the establishment of kindergartens; news articles in regard to the kindergarten were sent to newspapers; demonstration kindergartens were established; a directory of the principals of kindergarten schools and kindergarten supervisors was issued; card catalogues necessary for the work of the division were prepared; and work on the kindergarten exhibit for the Panama-Pacific Exposition was begun.

NEGRO EDUCATION.

From July 1 to October 1, 1913, the two agents of the division of negro education, assisted by a clerk, formulated plans, outlined itineraries, and studied available lists of negro schools, in preparation for several months of field work.

On October 1, T. J. Woofter, of Georgia, a graduate of the University of Georgia, was added to the force of the division as a special collaborator.

From October 1 until May 1 practically all of the time of the three agents was spent in the field. The schools of eight States were visited and comprehensive studies of each institution made. The States visited were as follows: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas. The more important schools of Kentucky, Kansas, Oklahoma, and Missouri were also visited and full reports made. As a further indication of the field work done, it may be added that about 400 schools were visited. The aggregate value of the property of these institutions is about \$12,500,000. The annual income is almost \$3,000,000. The pupils in the schools visited number approximately 75,000, of whom 15,000 are reported as pursuing secondary subjects.

After the latter part of April the three agents, with some clerical assistance, were engaged in tabulating the results of the field work. Descriptive statements concerning each school are being prepared, showing the location and type of school, the attendance, the training and sex of teachers, the school work and organization, the financial condition and management, the condition and upkeep of the plant, the school community relation to whites and negroes, and, most important of all, the recommendation of changes and improvements which the study indicates to be necessary in the school. For each of the States two tables have been made showing the private and public school facilities for colored children in each county.

Incidental to the main work of the survey some constructive work has been done in the schools visited. The most important phases of the constructive work have been in improving the accounting systems of the schools, in emphasizing the importance of cleanliness and sanitation in the dormitories, and in creating an interest in those elements of education that are especially needed in the rural sections.

The division has cooperated with the National Education Association committee for the reorganization of secondary education.

HOME EDUCATION.

American children are in school less than 4 per cent of their time from birth to 21 years of age. The home, the primitive and primary institution for the education of children, is still the most important agency for education for life—physical, mental, moral, industrial, economic, social, civic. The school is still only supplementary. Any agency, therefore, that would promote right education most effectually must find some means of cooperating with the home and helping parents, who are the most constant and should be the most effective teachers of their children.

It was for this purpose that the home-education division of the Bureau of Education was formed in May, 1913. Its aim is to investigate means and methods of improving education in the home, to assist parents in directing the play of their young children, promoting their early mental development, fostering the formation of right moral habits and establishing their physical health, the latter probably the most important element in education for life and efficient living. It also aims to bring about a more intelligent cooperation between the home and the school, so that both may work together intelligently for the welfare of the children and to extend the education of boys and girls who have quit school, but who are still at home, by stimulating and directing their home reading and study.

Through the cooperation of county school superintendents this division has obtained the names of 23,930 intelligent and influential women in 949 counties, each living near a country or village school, and is inviting their cooperation in carrying out its aims. It is hoped that the division may be able to obtain the cooperation of at least one such woman in the neighborhood of every rural school in the United States. Many parent-teacher associations have been organized, circulars of information have been distributed, and brief courses of reading for parents, children, and older boys and girls recommended. Several extensive courses of reading for children of different ages have been prepared and will be printed for general distribution. Plans are in preparation by which the boards of education and State school officers will cooperate in the promotion of this work. In the preparation of these reading courses, the bureau has had the assistance of a cooperating committee of special collaborators, consisting of C. Alphonso Smith, Edgar Allen Poe professor of English in the University of Virginia; Charles Forster Smith, professor of Greek in the University of Wisconsin; Richard Burton, professor of English in the University of Minnesota; and William Phelps, professor of English literature in Yale University, and of several collaborators especially interested in literature for children. The division has also prepared, for distribution, lists of lantern slides of educational value, suitable for use in parent-teacher associations and other similar societies.

Education begins at birth, and the first years of life are the most important. Loss of life or health, arrest of development, the formation of vicious habits, or the acquirement of false ideas and ideals in these years may render impossible or ineffective all efforts at education in later years. Realizing the supreme importance of the proper care of children in these earliest years, the division of home education has obtained the names of more than 10,000 mothers of children under 3 years old and prospective mothers who need advice and has corresponded with them or sent them helpful printed matter. To 6,626 of these were sent copies of a bulletin of the United States Public-Health Service, *On the Care of Babies*, donated to the bureau for this purpose.

Several bulletins on various phases of home education are in preparation.

The home-education division has two offices, one in the city of Washington and one in Philadelphia. The office in Washington is

under the immediate direction of the secretary of the division. The Philadelphia office is under the direction of a special collaborator of the bureau, who is also general director of the division.

CIVIC EDUCATION.

The division of civic education was established in March, 1914, in cooperation with the National Municipal League. Arthur W. Dunn, special collaborator in education in citizenship, was made chief of the division. The purpose of this division is to investigate methods of teaching, in the schools and elsewhere, those things that pertain directly to the duties and responsibilities of citizenship in a democracy, and of membership in larger and smaller communities, and to foster the desire and will to so live and act as to promote the public welfare.

Whatever calling or profession one or another may follow, all are citizens. Citizenship is inevitable, without regard to age, position in life, vocation, race, social position, or the possession of the right of suffrage. Every citizen is constantly influenced for good or bad by many agencies, and must become helpful and useful to the community or else a burden to society or a menace to the State, and perhaps both. The school, and every other conscious agency of education, whether for children and youths or adults, should work for civic efficiency.

It is generally conceded that the methods now in common use for teaching the duties of citizenship are inadequate, and there is a strong and widespread demand for help in developing better methods. On the other hand, successful experiments have been made here and there which seem to show the way to better methods and results. To find and bring together the best thought and experience on this subject, and make them available to all teachers, school officers, and others interested in civic education, and to bring into cooperation with the Bureau of Education all the agencies that have hitherto been working toward the common end of the better teaching of this subject, but independently of each other, has been the first work of this division. These agencies include not only schools and colleges, but numerous civic leagues and other organizations which both supplement the work of the schools for children and youths and also provide for adults instruction in civics and the duties of citizenship.

Within the four months since this division was organized it has gathered, organized, and developed much information about civic education in elementary schools; has cooperated with several associations studying civic education in secondary schools; has begun a study of the preparation of teachers, both in training and in service, for effective work in this and allied subjects; and has cooperated with the American Political Science Association in an inquiry in regard to instruction in government in colleges and universities. Through the cooperation of the Intercollegiate Civic League Mr. Dunn has visited seven colleges and universities and observed the work of civic and good-government clubs of college men in these institutions, and has made a preliminary report of his observations. He has also visited, on invitation, the cities of St. Louis, Kansas

City, Louisville, Boston, and Yonkers to confer with school officers and civic committees relative to the reorganization of civic instruction both by the school and by other agencies. The division has also made plans for the development of more adequate methods of civic instruction for adult immigrants and for the stimulation and promotion of public discussion and debate of questions of general and local public interest in colleges, schools, clubs, and social centers. A series of brief bulletins, known as "The civic-education series," has been begun. Two numbers of the series have been issued and material for other numbers has been collected. These bulletins are mailed to school officers and teachers in elementary and secondary schools.

EDUCATION OF IMMIGRANTS.

Through the cooperation of the North American Civic League a division for the investigation of the education of immigrants was established in April of this year under the immediate direction of Harry H. Wheaton, a trained sociologist and investigator. Mr. Wheaton was at once assigned to work in connection with the Pennsylvania Department of Labor, at Harrisburg, where he is investigating illiteracy among adult immigrants and methods of preparing immigrants for citizenship and for participation in American industrial, social, and civic life.

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THE ALASKA SCHOOL SERVICE.

During the year the field force of the Alaska school service consisted of 5 superintendents, 1 assistant superintendent, 97 teachers, 9 physicians, 9 nurses, and 3 hospital attendants. Seventy schools were maintained, with an enrollment of about 3,800; complete reports have not yet been received from the more remote schools.

The employees of the Bureau of Education in Alaska must meet emergencies which do not confront school superintendents and teachers in the United States. This was especially the case during the fiscal year 1913-14. On October 5 and 6, 1913, the town of Nome with its adjacent coast was devastated by a severe storm that resulted in the destruction of property and loss of life. Immediate action for the relief of the stricken natives was taken by Mr. Walter C. Shields, superintendent of schools in the northwestern district, assisted by the teachers. Subsequently a congressional resolution placed at the disposal of the Secretary of the Interior for the relief of those thus rendered destitute the sum of \$2,455.52, the balance remaining of an appropriation made in 1912 to relieve suffering caused by the eruption of Mount Katmai, a volcano in southwestern Alaska. Of the sum appropriated \$1,500 was set aside for the relief of Eskimos and \$955.52 for the relief of white persons, to be expended through the special disbursing agent of the Bureau of Education at Nome, under the direction of the superintendent of the northwestern district.

In November information was received of the prevalence of an epidemic of measles and of consequent destitution among the natives of Kodiak Island, Afognak Island, and of the Cook Inlet region, in

southwestern Alaska. At the request of the Interior Department, the Treasury Department sent the revenue cutter *Tahoma* from Seattle to the stricken district, carrying an officer of the Public-Health Service, medicines, disinfectants, and about two tons of food supplies furnished by the American Red Cross, upon the request of the Bureau of Education. On the *Tahoma* Dr. L. W. Jenkins, of the Public-Health Service, and Dr. H. O. Schaleben, superintendent of schools in the southwestern district, visited the villages in which the disease prevailed, and, with the cooperation of the teachers, they established quarantine, extended medical relief to the sufferers, and after the outbreak had been checked fumigated all infected places. Owing to these vigorous measures only about 30 deaths occurred. The effects of the epidemic were especially deplorable in the village of Seldovia, where it was necessary for the teacher to distribute food to the famishing people for some weeks after the disease had disappeared.

During the winter an outbreak of infantile paralysis occurred at Tanana and its vicinity, also at Crossjacket in the Upper Yukon district. In the absence of a physician of the Bureau of Education, the commanding officer at Fort Gibbon kindly allowed one of the nurses of the hospital corps of the Army to assist Mr. George E. Boulter, superintendent of schools in the Upper Yukon district, in maintaining quarantine and in taking other action necessary for the suppression of the disease. This epidemic was the cause of many deaths among the natives, and left several natives incurably paralyzed.

In the spring of 1914 the breaking up of the ice in the Yukon River caused a serious flood at Circle City which inundated the native village. The resulting destitution was relieved by the Bureau of Education.

As information of health conditions among the natives of Alaska becomes more definite, the need for larger funds for their medical relief becomes more urgent. The endeavors of the bureau to secure from Congress a specific appropriation for the support of an adequate medical service in Alaska have not yet met with success. In order to meet the imperative demands of the medical work, it has been necessary from time to time to increase the amount taken from the education fund. To provide the additional money demanded by the medical work, at the beginning of the fiscal year six of the schools in the smaller villages, with a population of approximately 800, were reluctantly closed. With the sole uplifting agency thus removed, there is danger that these villages will drift back to the deplorable conditions which prevailed before the schools were established.

Of the appropriation "Education of natives of Alaska for the fiscal year ended June 30, 1914," more than \$36,000 was used in employing nine physicians and nine nurses; in maintaining improvised hospitals at Nulato, Kotzebue, and Kanakanak; in payments under contracts with St. Ann's Hospital at Juneau, with the Good Samaritan Hospital at Valdez, with the Holy Cross Hospital at Nome, and with the Fairhaven Hospital at Candle for the treatment of natives who are destitute; also, as heretofore, in furnishing the teachers of the United States public schools with medicines and medical books in order to enable them to treat minor ailments.

In pursuance of the policy of reserving for the natives tracts of land from which undesirable white men can be excluded, during the fiscal year such reservations were made by Executive order at Fort Yukon, Klukwan, Port Gravina, Fish Bay, and Long Bay. Previous Executive orders have reserved for the natives Annette Island and tracts of land at Hydaburg and Klawock.

That the natives can, under judicious supervision, successfully conduct their own enterprises has been demonstrated at Hydaburg, where a dividend-paying cooperative store and a sawmill have been in operation for two years. By establishing their own cooperative stores the natives secure articles of food, clothing, and furniture at equitable prices and the shareholders divide among themselves the profits which would otherwise go to a middleman.

METLAKAHTLA.

In 1857 Mr. William Duncan, of Yorkshire, England, was sent by the Church Missionary Society as a lay missionary to the Tsimsean tribe of natives in the vicinity of Fort Simpson, British Columbia. Through his efforts this tribe was in course of time raised from its primitive condition. Disagreement with the bishop of the Church of England, who had been sent to preside over the religious activities of the colony, also troubles with the Canadian Government regarding the ownership of land, caused the natives under Mr. Duncan's guidance to consider the question of migrating from British Columbia into Alaska. Accordingly, Mr. Duncan visited Washington, where he conferred with the President, with the Secretary of the Interior, and with other officials regarding the proposed migration. The result of Mr. Duncan's visit to Washington was that in 1887 the colony moved from British Columbia to Annette Island in Alaska. Congress in the fifteenth section of the act approved March 3, 1891, (26 Stat. L., 1101), reserved Annette Island for the use of the Metlakahtlans and such other Alaskan natives as may join them. Upon the reservation thus provided the settlement grew and prospered.

As the Metlakahtlans came into closer touch with the neighboring settlements and observed the schools maintained by the Federal Government among them, they desired similar educational privileges for Metlakahtla. For several years letters and petitions were received by the Commissioner of Education from the Metlakahtlans asking for the establishment in their village of a United States public school under the management of the Bureau of Education. The Commissioner of Education, not being thoroughly convinced of the wisdom of placing a United States public school in this unique settlement, and lacking the necessary funds, hesitated to bring the matter to the attention of the Secretary of the Interior.

The cogency of the petitions which continued to come from the natives of Metlakahtla, the recommendations of the chief of the Alaska division and of the superintendent of schools in southeastern Alaska, also the visits of the governor of Alaska and of the Commissioner of Education to Metlakahtla, finally resulted in a request to the Secretary of the Interior for authority to establish a United States public school in Metlakahtla. The request was granted, and

the school was opened during November, 1913. The Metlakahtlans showed their appreciation of the school by placing at the disposal of the Bureau of Education a large hall in which the sessions of the school are held until funds are available for the erection of a suitable school building, and by providing a residence for the teachers. The two teachers sent by the Bureau of Education were enthusiastically received and the school was immediately successful, the enrollment reaching 140. A night school for adults has also been maintained.

Expenditures from appropriation "Education of natives of Alaska, 1913-14."

Appropriation		\$200,000.00
Salaries in Alaska	\$91,939.33	
Equipment and supplies	15,818.15	
Fuel and light	18,241.75	
Local expenses	2,065.51	
Repairs and rent	4,268.60	
Erection of buildings	5,400.00	
Medical relief	36,343.08	
Destitution	1,797.48	
Commissioner's office salaries	5,626.66	
Seattle office salaries	7,670.50	
Commissioner's office expenses	200.00	
Seattle office expenses	500.00	
Traveling expenses	9,675.74	
Contingencies	453.20	
Total		200,000.00

THE ALASKA REINDEER SERVICE.

On account of the remoteness of the region affected by the reindeer industry, the latest available statistics regarding the reindeer herds are those of the fiscal year ended June 30, 1913, according to which the total number of reindeer in Alaska at that time was 47,266, distributed among 62 herds. Of the 47,266 reindeer, 30,532, or 65 per cent, were owned by 797 natives; 3,853, or 8 per cent, were owned by the United States; 5,047, or 11 per cent, were owned by missions; and 7,834, or 16 per cent, were owned by Lapps. The total income of the natives from the reindeer industry during the fiscal year, exclusive of the meat and hides used by the natives themselves, was \$66,966. The total, 47,266, is a net increase of 23 per cent during the fiscal year, notwithstanding the fact that nearly 5,000 reindeer were killed for their meat and skins during the year.

No deterioration in the herds on account of inbreeding has been noted. On the contrary, the chief of the Alaska division maintains that the reindeer now in Alaska are larger animals than those which comprised the original stock imported from Siberia, that Alaska affords a better range than Siberia, and that the climate is better adapted to the reindeer industry. The herds in Alaska average more than 700 reindeer each, so that the danger of inbreeding can not be serious. The introduction of wild caribou into some of the herds has increased the size of the reindeer in those herds.

The greatest menace to the reindeer industry are the fires, usually started in the neighborhood of mining camps, which sometimes cause the wanton destruction of vast stretches of valuable grazing lands.

In August, 1911, 40 reindeer were delivered to the Department of Commerce for use in stocking St. Paul and St. George Islands; in June, 1913, the number of reindeer on those islands had increased to 88, of which 51 were on St. Paul and 37 on St. George.

By Executive order the Aleutian Islands have been set aside as a reservation under the Department of Agriculture and the Department of Commerce for the conservation of fish and fur-bearing animals and for the raising of reindeer. In compliance with the request of the Department of Agriculture, 55 reindeer were delivered to that department during September, 1913, from one of the herds of the Department of the Interior on the Alaska Peninsula, of which 19 were landed on Amaknak Island and 36 on Umnak Island, of the Aleutian chain.

Expenditures from appropriation "Reindeer for Alaska, 1913."

Appropriation -----		\$5,000.00
Supplies -----	\$4,883.30	
Establishing new herds -----	100.00	
Contingencies -----	16.70	
Total -----		5,000.00
* * * * *		

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

REPORT OF THE DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY.

GEORGE OTIS SMITH, *Director.*

The appropriations for the work of the United States Geological Survey for the fiscal year 1913-14 comprised items amounting to \$1,517,920. The plan of operations was approved by the Secretary of the Interior, and a detailed statement of the work of the several branches and divisions of the Survey is presented on later pages of this report.

SPECIAL FEATURES.

THE PROVINCE OF A FEDERAL SURVEY.

An amendment to the sundry civil appropriation bill was offered in the House of Representatives which, if agreed to by the Senate, would have restricted the geologic work of the Federal Survey to the public lands. As the Senate disagreed to this limitation, the only effect of the proposed legislation was to call attention afresh to the questions raised in the first years of the Survey's history and to reaffirm the policy determined by Congress 32 years ago. The organic act of the Survey, approved March 3, 1879, provided for the work of the new service and defined the duties of the Director of the Geological Survey in these words:

That this officer shall have the direction of the Geological Survey, and the classification of the public lands and examination of the geological structure, mineral resources, and products of the national domain.

Director King saw an ambiguity in the use of the words "national domain," and in the first annual report of the new bureau he stated that "that term was supposed by the first framers of the law to cover the entire United States." He recognized the fact, however, that the term might be held to mean simply the public lands, and with only a small appropriation available to begin the vast work of the new bureau, he chose to take the conservative view and to confine field operations to the lands owned by the Nation rather than to interpret "national domain" as meaning the area within the outer boundaries of the Nation.

At the first session of the following Congress, in June, 1879, an effort was made to extend the authority of the Director of the Federal Survey, and a joint resolution, on motion of Representative Atkins, of Tennessee, chairman of the Committee on Appropriations, was promptly passed by the House amending the organic act of the Survey by providing "that the Director of the Survey may extend his examinations into the States," thus extending the field of the new organization over the whole United States. This legislation was initiated by reason of the construction placed by the law officers of the Interior Department on the words "national domain," these officers contending that the words should apply only to the Territories and States containing public lands, and the object of the legislation was to connect the geology of the national domain, so defined, with that of the States. At the following session of the same Congress the joint resolution was considered by the Senate, but although there was long debate the consideration of this measure was not completed and it thus failed of passage.

It might well have been argued whenever this matter was under debate that the framers of the act establishing the Survey had intended the words "national domain" to have a wider meaning than "public lands," because after these words in the act they wrote a provision prohibiting the Director and members of the Geological Survey from having "personal or private interests in the lands or mineral wealth of the region under survey." Obviously that provision indicates that the work contemplated under the authority given to the new organization included surveys over land in part at least under private ownership.

In 1882, however, all possible ambiguity was removed by a Senate amendment to the pending sundry civil bill whereby the authorization "to continue the preparation of a geological map of the national domain" was made to read "to continue the preparation of a geological map of the United States." After debate, the House, on August 4, concurred in the Senate amendment, which thus authorized the extension of the geologic work of the Survey over the whole country.

In 1906 and 1907 it was ruled in the House of Representatives that the topographic survey of the United States and the preparation of a geological map of the United States are both public works in progress and that legislative provisions looking to the continuance of such work in progress are not subject to a point of order.

In a broad way, the two views expressed in Congress in 1914, as well as in 1879 and 1882, relate simply to the question of the proper

function of a Federal investigative service like the Geological Survey with respect to privately owned land.

The function of the Government bureau with relation to publicly owned land is unquestioned, and it has been in recognition of this special function that the land-classification work has been emphasized and expanded until it now constitutes an integral part of the Survey's activity and represents a large share of the current expenditures. Not only is the investigation of all the possible values attaching to lands belonging to the Nation in line with business principles, but the determination of what constitutes the highest use of the undeveloped lands is an allied task of even greater importance—indeed, it is nothing less than a national duty. The Survey's function on the public lands is therefore in no sense a matter for debate, and "the classification of the public lands" in the broadest sense, including the consideration of questions of highest use as well as of lawful disposition, is the special task laid upon this branch of the Government service. The investigations on the public lands directed to the determination of their value may and do go into whatever detail is demanded by the particular resources of this or that tract of land and by the questions to be answered relative to preferable utilization. The Government is the landowner and is interested as a landowner in the natural resources of its real estate.

The function of the Government and the Government bureau with relation to privately owned land must be determined by other facts. The attitude of landlord is here plainly impossible, and land classification in the sense of appraisal and inventory of individual tracts has no place. Presumably in this case the Federal Government is not the one most interested in land value, but rather the interest of the individual or corporation landowner is superior to any concern on the part of the Nation. Upon this sort of premise undoubtedly was based the prohibition in the organic act of the Survey, to the effect that the Director and members of the Survey "shall execute no surveys or examinations for private parties or corporations"—a prohibition which in administrative practice has been construed as aimed against all work done primarily for the benefit of single landowners other than the Government itself, whether such examinations are paid for by the private owners or conducted at public expense.

The prohibition just referred to has never in the history of the Survey been considered as a bar against entry upon privately owned land, or in any sense as a restriction on the extent of the surveys and investigations. Moreover, at least nine States, East as well as West, by special enactment authorize the entry upon private lands to officials of the United States Geological Survey. At the very beginning Director King planned the geologic investigation of the three more important metalliferous mining districts of that day—Leadville, Eureka, and the Comstock—in all of which the lands examined in most detail, both on the surface and underground, were privately owned. But each of these examinations, helpful as it was to the individual mine owners, contributed still more to the development of the whole district as an element in national prosperity and yielded scientific results of great value to the public at large, and indeed the Leadville report as an epoch-making contribution to the study of ore deposits made the world debtor.

The distinction seems obvious. The determinative factor in the whole matter is whether the investigative work on privately owned land yields results that are merely of local and personal interest, or results that are of general and national value. The knowledge of mineral deposits can be gained in large part only by entrance to mines, and thus to private lands. If restricted to public lands, geologists would have no opportunity to advance the study of ore deposits or indeed in many cases to determine the coal value of the publicly owned lands. The detailed examination by the Government geologist of a Leadville mine in 1879, or of a mine in the Yerington district in 1914, is justified only as the facts of ore occurrence observed and the laws of ore genesis determined are found to have broad application in the winning of mineral wealth. This principle applies throughout the whole field of geologic investigation—property lines and State boundaries must be overlooked by the geologist who is attacking a large problem. Land ownership is only an incident when large questions of natural resources are considered.

This leads to another phase of the national character of the United States Geological Survey and its work. The special interest of the Government in its own land being granted, it must be added, as was suggested this year by Representative Sherley at a hearing before the House Appropriations Committee, that "so far as the development of the mineral resources of the country is concerned, it is just as important to know the resources of privately owned land as of Government-owned land."

Director King, in the first annual report of the Survey, in illustrating the need of Federal investigation, selected iron as a mineral resource of large importance and stated that with the wide distribution and variety of occurrences of iron ores, neither corporations nor individual States could adequately investigate the subject, and he added that only for a few exceptional minerals could private or State enterprise successfully prosecute such work. If it is remembered that in this same report Director King prophesied for the United States a future annual output of mineral products having a value of a billion dollars, and that the present production is two and a half times that amount, it must be conceded that the desirableness of the Federal scientific investigation of these national resources is even greater now than in 1880.

The crux of the matter lies in the selection of subjects of investigation or of areas for survey as well as the determination of the degree of refinement with which the work should be done. In these decisions the general purpose of the work must serve as a guide, and probably few will oppose the proposition that wherever the investigation serves the general public its prosecution by the National Government is justified, and the greater the public interest in the expected results the larger the claim of that work for preference.

At this time of intensified concern in the highest utilization of every material resource the field of the varied activities of the United States Geological Survey is so broad that it has no disinclination to share the opportunities for research with State organizations of similar character. Provisions that were suggested in the Congressional debates of 30 years ago as necessary to enforce the preference right of individual States to investigate their own territory could not accomplish as much as is now accomplished by either formal or

informal cooperative agreement. The cooperation existing between State and Federal geological surveys is both intimate and extensive in the conduct of topographic surveys, stream gaging, and geologic investigations, as well as in the collection of mineral statistics. A total of several hundred thousand dollars annually contributed by each party is the measure of this cooperation. In part the Federal Survey acts as the disburser of State funds in this technical work, in part the State official acts as the representative of the larger organization in local work, and again the National Survey investigates some large interstate problem in behalf of adjoining States. Each of these cooperative methods is effective and prevents duplication of effort, accomplishes standardization of results, and promotes the coordination that secures the general results for the national bureau and the more local benefits for the State organization.

Under the present plan of coordination with the State surveys, which is improved from year to year, it is believed that the United States Geological Survey can most effectively cover the national field of scientific investigations and can contribute to the Nation's advancement to a degree that would be impossible if the Federal bureau were restricted in its operations to the rapidly diminishing remnant of public lands. It is a most conservative statement that never before has the general public been in closer touch with the United States Geological Survey or made larger use of the published or unpublished results of its surveys and investigations.

SCOPE OF THE WORK.

In the following pages of this administrative report the activities of each branch of the Survey are set forth in detail, but a brief summary will serve to indicate that the United States Geological Survey is national in scope as well as in name.

Geologic investigations were conducted in 47 States, Alaska, Hawaii, and the Canal Zone; topographic surveys were made in 35 States, Alaska, and Hawaii; and stream measurements were continued in 39 States, Alaska, and Hawaii. The total area covered by the geologists in reconnaissance and detailed surveys was more than 75,000 square miles, and the area mapped by the topographers was more than 25,000 square miles, an aggregate area almost nine-tenths that of the United Kingdom. The land-classification work of the Geological Survey last year included reports on an aggregate of 45,000,000 acres, or 70,000 square miles, of public lands, an area of coal, phosphate, oil, and dry-farming lands greater than the area of all the New England States.

In the collection of the statistics of mineral production, the Geological Survey cooperates with the State geologists of 16 States and carries on correspondence with 90,000 producers.

WORK OF THE YEAR.

PUBLICATIONS.

The work of the Geological Survey is reflected chiefly in the publication and distribution of its printed reports and maps. The book publications of the year consisted of 1 annual report, 6 professional

papers and 9 separate chapters from 2 professional papers, 28 bulletins and 42 separate chapters from 5 bulletins, 15 water-supply papers and 6 separate chapters from 2 water-supply papers, 1 annual report on Mineral Resources, 1912 (published also in 64 advance chapters, 18 delivered in 1912-13 and 46 in 1913-14), 16 advance chapters from the annual report on Mineral Resources for 1913, 5 geologic folios, 3 pamphlets entitled "Suggestions to authors of papers submitted for publication by the United States Geological Survey," "Service Bulletin, July 1913," and "Plans and specifications for current-meter gaging stations," 3 charts showing mineral and clay products and coal production, 27 map index circulars and lists of publications, and 55 press bulletins. The total number of pages in these publications was 16,631.

The total of all editions received was 475,925 books, 23,070 geologic folios, and 929,446 maps, a grand total of 1,428,441. There were distributed 585,514 books, 64,543 folios, and 454,654 maps (including 197 books, 59,075 folios, and 338,253 maps sold), a total of 1,105,711, a notable increase in distribution of book publications.

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GEOLOGIC BRANCH.

ADMINISTRATION.

The geologic branch embraces four divisions—(1) geology, David White, chief geologist in charge; (2) Alaskan mineral resources, A. H. Brooks in charge; (3) mineral resources, E. W. Parker in charge; and (4) chemical and physical researches, G. F. Becker in charge.

The scope of the work of these divisions is well established, and although each is largely autonomous, they cooperate effectively in their several lines of work. Many of the statistical reports of the division of mineral resources are prepared by geologists in the division of geology, who are specialists in the geology of the several minerals considered and whose field investigations give opportunities for close observation of the various mineral industries. During the field season members of the land-classification board are enrolled in field parties of the geologic branch engaged in the classification of the public lands.

The chief geologist plans the geologic investigations to be carried on by the Survey in the United States, and has general supervision of the field work. He gives special attention to cooperation in geology with the State surveys and is the executive officer of the branch. These duties leave him but little opportunity for systematic investigations, either in the field or in the office, the greater part of his time for field work being occupied in field inspection and conferences and the supervision of the work of the section of eastern fuels.

PUBLICATIONS.

The publications of the fiscal year 1914 prepared in the geologic branch consisted of 24 professional papers, bulletins, etc., as well as 51 chapters of reports later published as annual volumes and 5 geologic folios. Titles and brief notices of these publications are given on pages 13-31.

Besides these publications 48 papers were, with the permission of the Director, published in scientific journals and in the transactions of scientific societies. In view of the scientific importance of many of these shorter papers, some of which represent the by-product of investigations that are primarily economic, provision was made at the close of the year 1913 for the publication of such of these scientific papers as are complete in form, are of general interest, and do not require elaborate illustration, in a set of short professional papers to be known as "Shorter contributions to general geology." The expectation that the publication of these papers would greatly stimulate the scientific work of the Survey by encouraging broader and more thorough observation and deduction on the part of the geologist is being realized. The papers submitted and published in Professional Papers 85 and 90 have been of high merit and varied scope.

The areas in the United States covered by geologic maps published by the Survey and the general nature of the work are indicated on Plate I. It should be borne in mind that a number of reports and maps prepared by geologists of this Survey have been transmitted for publication by cooperating State surveys. The work in Alaska is given in the section on the division of Alaskan mineral resources.

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TOPOGRAPHIC BRANCH.

PERSONNEL.

The technical corps of the topographic branch was increased during the year by the appointment of 9 junior topographers and the reinstatement of 1 topographic engineer, 2 assistant topographers, and 1 junior topographer. It was reduced 13 by transfers and resignations. With these changes the technical force now includes 1 chief geographer, 11 geographers, 23 topographic engineers, 31 topographers, 37 assistant topographers, 55 junior topographers, and 8 draftsmen—a total of 166. In addition, 47 technical field assistants were employed during the whole or a part of the field season. One geographer, 1 topographic engineer, and 1 assistant topographer are on leave without pay; and 2 topographers, 3 assistant topographers, and 6 junior topographers were furloughed.

PUBLICATIONS.

The published work of the topographic branch for the fiscal year consists of 102 maps and 10 book publications, namely, "Results of triangulation and primary traverse, 1911 and 1912"; "Results of triangulation and primary traverse in Ohio, 1898 to 1911, inclusive"; and bulletins giving results of spirit leveling in Illinois, Kentucky, Indiana, Oregon, Washington, Wyoming, Oklahoma, and Kansas. Brief summaries of these publications (Bulletins 551-558, 564, and 571) are given on page 23. Manuscript for level results in Arizona from 1899 to 1913, inclusive, was transmitted for publication, and level results for 1913 work were added to the manuscripts for bulletins previously transmitted for the following States: Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Mich-

igan, Minnesota, Missouri, Nebraska, Oklahoma, Oregon, Utah, Virginia, Washington, Wisconsin, Wyoming, and the Territory of Hawaii.

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SUMMARY OF RESULTS.

As is shown in the tables, which give the details of topographic mapping and spirit leveling for the fiscal year, the total new area mapped was 18,808 square miles, making the total area surveyed to date in the United States 1,197,782 square miles, or 39.6 per cent of the entire country. In addition, 4,290 square miles of resurvey was completed, making the total area of actual surveys during the year 23,098 square miles.

In connection with these surveys 5,365 linear miles of primary and precise levels were run, making 247,407 miles of primary and precise levels run since the authorization of this work by Congress in 1896. In the course of this work 1,326 permanent bench marks were established. In addition, 791 linear miles of river surveys were run.

Triangulation stations to the number of 134 were occupied, and 123 were permanently marked. Primary traverse lines aggregating 2,299 miles were run, in connection with which 273 permanent marks were set. In the course of this work 21,810 square miles was covered by primary control.

The area covered by detailed topographic surveys in Alaska during the fiscal year, as reported on page 77, was 287 square miles, for publication on the scale of 1:62,500.

Topographic surveys were also carried on in Hawaii, the area mapped during the fiscal year being 342 square miles, for publication on the scale of 1:31,680, making the total area surveyed to date in Hawaii 1,374 square miles. In connection with the surveys in Hawaii, 44 miles of primary levels were run and seven permanent bench marks were established, making the total number of miles of primary and precise levels run by this Survey in Hawaii 578.

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WATER-RESOURCES BRANCH.

PERSONNEL.

The technical force of the water-resources branch has been reduced 8 during the year by transfers, resignations, and deaths, and has been increased by the appointment of 14 junior engineers, a net increase of 6. At the end of the year the technical force consisted of 1 chief hydraulic engineer, 8 hydraulic engineers, 1 engineer, 1 hydrographer, 1 chemist, 26 assistant engineers, 2 assistant geologists, 1 assistant chemist, 32 junior engineers, 1 junior chemist, and 2 geologic aids, a total of 76. Of this number, 1 hydraulic engineer, 2 assistant engineers, 1 assistant chemist, and 2 junior engineers are on furlough, and 1 hydrographer and 3 assistant engineers are employed occasionally at a per diem compensation.

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The work done under cooperative agreements in the several States has been limited to stream gaging, except as indicated below.

California.—In addition to a large amount of stream-gaging work in California, investigations of ground water in Sacramento and Santa Clara valleys were continued during the year and are still in progress. Measurements of depths to ground-water level were made in southern California. Reports containing the results of hydro-metric investigations were prepared and published.

Connecticut.—The cooperative work in Connecticut consisted chiefly of ground-water surveys.

Hawaii.—In addition to the stream-gaging work in Hawaii measurements of precipitation and studies of water losses in irrigation canals are being made.

Idaho.—Studies of the losses and gains in the rivers and irrigation systems of a portion of Idaho have been made at the request of the State engineer in conjunction with the regular stream gaging.

Oregon.—Special reports on Deschutes River and on the chemical composition of river waters of Oregon are now in press. A complete report on stream-flow investigations in Oregon is being compiled.

Utah.—A detailed study of the water supply and the present and possible future use of Sevier River is in progress.

In addition to the cooperative work described above, in which the States have furnished money for examinations made by the Survey staff, investigations of ground waters in cooperation with the agricultural experiment stations of New Mexico and Arizona were continued as in previous years. The contributions of the experiment stations consisted in making analyses of samples of water and soluble salts collected during ground-water surveys in these States.

RECLAMATION SERVICE.

Cooperation with the Reclamation Service in stream-gaging work has been continued as in previous years. The gaging stations operated at the expense of the reclamation fund are located on streams relied on to furnish water to reclamation projects under construction by that Service. The field work of stream gaging is done by Survey engineers who are engaged in such work in the locality, and repayment of actual cost is made by the Reclamation Service through a transfer of funds.

OFFICE OF INDIAN AFFAIRS.

Investigations and reports have been made by the Survey at the request of the Commissioner of Indian Affairs in connection with the classification of lands within Indian reservations with regard to water-power and reservoir sites and for the purpose of locating ground-water supplies, as follows:

Flathead Reservation.—The report on the power-site and reservoir possibilities on the Flathead Reservation was made under authority dated January 24, 1913.

Klamath Reservation.—A report was made on the power-site and reservoir possibilities of the Klamath Reservation under authorization of October 12, 1911.

Moki and Navajo reservations.—The investigation of the occurrence and availability of ground-water supplies in the Moki and Navajo reservations, authorized April 11, 1913, was continued in the field during July and a part of August, and a report thereon was sent to the Office of Indian Affairs.

An investigation of the possibility of developing water power on Hogback canal, located in T. 12 N., Rs. 1 and 2 W., and T. 13 N., R. 2 W., New Mexico meridian, in the Navajo Reservation, has been made under authority dated July 2, 1913, but the report thereon has not been filed.

San Carlos Reservation.—An investigation to determine the practicability of developing ground-water supplies for irrigation on the San Carlos Reservation was authorized May 25, 1914, and plans have been made to begin the field work soon after July 1.

Wind River Reservation.—Under authority dated July 2, 1913, power-site and reservoir possibilities on the Wind River Reservation were examined, but no report thereon has been made.

Yakima Reservation.—A report was made on the power-site and reservoir possibilities of the Yakima Reservation, under authorization of September 5, 1912.

Stream gaging.—Stream-gaging work has been continued on the following Indian reservations in accordance with authorizations of the Office of Indian Affairs: Colville, Crow, Fort Hall, Klamath, Menominee, Pine Ridge, Queniult, Rosebud, San Carlos, Standing Rock, Warm Springs, and Yakima.

PUBLIC-HEALTH SERVICE.

Special stream-gaging work is being done in the Ohio River basin in cooperation with the Public-Health Service in connection with an investigation of the pollution of that river.

CITY OF SAN FRANCISCO.

Stream gaging is in progress on Tuolumne River, in California, in cooperation with the city of San Francisco, in connection with the utilization of the water of that river, to be stored in the Hetch Hetchy Valley as a water supply for the city.

PUBLICATIONS.

The work of the water-resources branch during the year is represented by 15 water-supply papers and 6 advance chapters. Titles and brief summaries of these publications are given on pages 25–28. Thirty-three other publications were in press at the close of the year and five manuscripts were in hand awaiting editing.

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LAND-CLASSIFICATION BOARD.

GENERAL FEATURES.

The land-classification board has had no important changes in its personnel and its work has followed essentially the lines of the previous fiscal year. The energies of its staff have been devoted largely to the expeditious promulgation of public-land classifications based on the field work of the other branches of the Survey, the continuation of the cooperative correspondence with other bureaus of the department, by which the technical information in the Survey is rendered available in public-land administration, and the prepa-

ration of special reports of widely diverse character for various governmental organizations.

At the close of the year the board's staff contained 34 permanent employees, of whom 9 are geologists, 4 engineers, 3 draftsmen, 16 clerks, and 2 messengers.

- SPECIAL FEATURES.

Among the items of particular importance in the work of the board during the year, the large volume of coal and phosphate classifications has a prominent place. More than 8,250,000 acres of lands withdrawn for coal classifications were classified and restored to entry during the year and more than 1,400,000 acres additional were classified for early restoration. Nearly 1,300,000 acres of coal lands were appraised and were made available for purchase at the appraised prices. This work increases the total of appraised lands to more than 19,600,000 acres at the close of the fiscal year. The average price of the lands thus appraised is slightly less than \$40 an acre.

Progress has also been made in the examination of withdrawn phosphate lands. Nearly 3,000,000 acres were included in withdrawals on July 1, 1913, and approximately 1,700,000 acres were examined during the fiscal year. The results of this examination will appear in extensive modifications of the outstanding withdrawals by large restorations and much smaller additional withdrawals.

An additional large element in the work of the board is the classification for the Office of Indian Affairs of somewhat more than 2,400,000 acres of lands in the various reservations. These classifications were based on the field work of the fiscal years 1912-13 and 1913-14, and were made at the request of the commissioner to assist in the proper disposition of the Indian lands.

Several special reports were prepared during the year upon power developments on the public domain and upon the interrelations of the companies engaged in the development of hydroelectric energy. Most of these special reports were prepared for the department, but a large body of data bearing on power developments and control was supplied to the Committee on Public Lands of the House of Representatives to assist it in its consideration of the Ferris water-power bill (H. R. 14893). These data have been published as Exhibit N of the hearings on this bill before the Committee on Public Lands, Sixty-third Congress, second session.

No new legislation providing for the disposition of the reserved coal, oil and gas, phosphate, or potash deposits of the public domain has been enacted during the year, but the outlook for such legislation was brighter at its close than at any time since the question has been seriously agitated.

These various factors of the board's activities are reflected in a measure in the volume of its correspondence. During the year 15,515 letters were referred to the board, and 19,356 reports, letters, and notifications were prepared by the board. This is an average of 52 incoming pieces of mail and about 64 outgoing pieces for each working-day—a record that is not substantially different from that of the preceding year.

COOPERATIVE CORRESPONDENCE.

In November, 1913, in order to expedite the disposition of cases in the department, the cooperative agreement between the General Land Office and the Geological Survey, which forms the basis of the cooperative correspondence, was partly suspended. Although this partial suspension permitted the patenting of land to land-grant railroads and others without scrutiny as to its mineral character, it enabled the Geological Survey to dispose of practically all its accumulated cases by the close of the fiscal year.

The suspension did not affect cases involving withdrawn lands, cases already referred to the Survey, claims for small holdings, Santa Fe Pacific selections, Indian allotments, or cases in Alaska and California. These cases, together with those received between the opening of the fiscal year and the suspension of the agreement, aggregate 4,478 requests for information received during the year, and 2,711 field-service reports for action. The Survey furnished information in 7,628 cases and acted on 3,620 field-service reports, leaving 199 requests for information and 197 field-service reports pending. Thus the Survey is practically current in this work and should be able to keep current on the resumption of the agreement.

The following table shows the year's record in the several classes of cooperative cases, including those discussed more particularly under the work of the hydrographic and mineral divisions and including also enlarged-homestead petitions, which, while not cooperative cases, are sufficiently similar in the methods by which they are handled to be appropriately considered in the same connection.

Balance sheet of cooperative cases for the year ended June 30, 1914.

Class of cases.	Pending July 1, 1913.	Received.	Disposed of.	Pending June 30, 1914.	Gain (+) or loss (-).
Involving mineral character only:					
Land Office requests for information.....	60	223	271	12	+ 48
Land Office field-service reports.....	275	1,237	1,427	85	+ 190
Applications for reclassification, coal.....	15	16	31	0	+ 15
Applications for classification, coal.....		43	40	-3	- 3
	350	1,519	1,769	100	+ 250
Involving water resources only:					
Land Office requests for information.....	43	306	335	14	+ 29
Land Office field-service reports.....	16	85	85	16	0
Forest-reserve cases.....	28	63	89	2	+ 26
Applications for reclassification, power.....	19	46	52	13	+ 6
Right-of-way applications.....	58	503	451	110	- 52
Carey Act lists.....	0	19	19	0	0
Enlarged-homestead petitions.....	1,347	5,709	5,399	1,657	- 310
Desert-land proofs under irrigation projects.....	15	219	115	119	- 104
	1,526	6,950	6,545	1,931	- 405
Involving both mineral character and water resources:					
Land Office requests for information.....	2,611	3,055	5,529	137	+2,474
Land Office field-service reports.....	180	495	615	60	+ 120
Land Office requests for information as to water resources, accompanied by field-service reports as to mineral character.....	635 319	894 1,278	1,493 1,562	36 35	+ 599 + 284
Indian Office cases.....					
	3,745	5,722	9,199	268	+3,477
	5,621	14,191	17,513	2,299	+3,322

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REPORT OF THE DIRECTOR OF THE BUREAU OF
MINES.JOSEPH A. HOLMES, *Director.*

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THE LARGER FEATURES OF THE WORK OF THE BUREAU
OF MINES SINCE ITS ESTABLISHMENT.

The chief work of the bureau during the four years since its establishment, from July 1, 1910, to June 30, 1914, has been the investigation of problems having to do with the causes and prevention of coal-mine explosions and the safeguarding of the lives of coal miners. In addition, work has been done on the testing of coal and other mineral fuels belonging to or for use of the Government of the United States. During the fiscal year just ended investigations were undertaken looking to greater safety and the prevention of waste in the metal-mining and miscellaneous mineral industries of the country. Recently a small amount of work has been done in an examination of several oil and gas fields of the country with a view to eliminating the large waste of natural gas in these fields. The need of such investigations may be plainly seen when it is understood that so large a part of this waste is easily preventable, that the supplies of natural gas are limited, and that the gas wasted yearly may be fairly valued at not less than \$50,000,000.

INVESTIGATION OF COAL-MINE EXPLOSIONS.

The work of the bureau at its inception centered around the investigation of coal-mine explosions with a view to determining the causes and suggesting remedies or preventive measures for lessening the large number of disasters occurring in the United States every year. This problem has been attacked from many directions, as indicated by the detailed reports of investigations appearing on other pages of this report.

INVESTIGATIONS OF EXPLOSIVES USED IN COAL MINING.

In connection with this work on mine explosions there have been carried on a number of investigations into the nature of the explosives used in mining operations, with a view to changing the character of explosives so as to meet the needs of the various branches of mining, and especially to increase safety in coal mines. Both the improper use of explosives and the use of improper explosives have resulted in coal-mine disasters. The investigation of explosives is also important to metal miners, whose health and efficiency are seriously affected by the use of improper explosives, but the bureau has not yet had the facilities for taking up a thorough investigation into this latter phase of the subject.

INVESTIGATIONS OF THE USE OF ELECTRICITY IN COAL MINING.

Another extensive series of investigations has been carried on for the purpose of determining the extent to which electricity used in coal mines may cause dust or gas explosions and the possibility of

better safeguarding the use of electricity in coal-mining operations so as to reduce the possibility of explosions and lessen the risk of injury to workmen from shock. The problem of the proper and safe use of electricity in metal mining has not as yet been attacked.

INVESTIGATIONS OF SAFETY LAMPS.

Much attention has been paid to the proper construction and use of electric and other safety lamps and their use in gaseous coal mines. Tests have been made to ascertain the comparative merits of different types of safety lamps, including their usefulness in furnishing light to miners, their relative safety, and their value in indicating the presence of explosive gas. This investigation has covered both electric lamps and oil-burning safety lamps. A beginning has been made in investigating the relative efficiency, economy, and safety of various classes of lamps and candles for use in metal mines.

INVESTIGATION OF MINE-RESCUE AND FIRST-AID APPARATUS.

Investigations have been conducted looking to the determination of the relative merits of the various types of apparatus used by miners in rescue and in first-aid work at a mine disaster and the possibility of improving them. In connection with these investigations the bureau has established six mine-rescue stations and has purchased, equipped, and operated eight mine-rescue cars and one rescue motor truck. Although primarily investigative, this work includes the drilling of miners at different points in the various coal and metal fields in the proper use of rescue apparatus, so that in case of a disaster at any mine a sufficient number of trained men can be found at or near that mine for immediate rescue and first-aid work.

OTHER WORK.

The bureau has been bringing together in shape for easy use by State inspectors, legislators, and others, the mining laws, rules, and regulations found effective in different countries, and in collecting data concerning safety and health conditions in the mining, metallurgical, and mineral-industry plants of this country. Recently the bureau has begun a series of investigations looking to greater efficiency and greater safety in the metal-mining and the metallurgical industries.

BRIEF SUMMARY OF THE MORE IMPORTANT WORK DURING FISCAL YEAR 1913-14.

Through the study of coal-mine explosions and the work at the experimental mine, four types of explosion-stopping devices, in which rock dust is used, were developed, as follows: Box barriers, concentrated barriers, ventilation-door barriers, and ventilation-stopping barriers. This was perhaps the most important mine-safety accomplishment of the year.

Tests were made to ascertain the inflow of inflammable gases in different coal mines.

All of the serious and many of the lesser mine explosions and fires were investigated, and such assistance was rendered as could be given.

Tests were made to determine the inflammability of coal dust and the inflammability of flour-mill and other dusts.

Mine-rescue training was given 2,826 miners, first-aid instruction and training to 5,780. At the end of the year the total of miners trained by the bureau since its organization was 24,975.

Mine-rescue breathing apparatus were improved through tests and studies by the bureau.

First-aid and rescue training was extended more generally to metal-mining districts.

Bureau of Mines rescue crews recovered or brought to safety 7 miners.

Mine-rescue and first-aid contests in cooperation with many organizations were held, as were field maneuvers for increasing the efficiency of the bureau's rescue corps.

Demonstrations were made of various types of safety and efficiency apparatus and appliances.

Various types of mining explosives were studied, and demonstrations of permissible explosives were made in various coal-mining districts.

Preliminary information was collected regarding the use of props most effectively in coal mines.

The safer use of electricity in and about mines was studied.

Recommendations were made regarding a metal-mining explosive giving off a minimum amount of noxious gases.

Safety recommendations were made in connection with the driving of tunnels under bodies of water.

Valuable information on metal-mine ventilation was collected.

The injurious effects of rock dust in metal mines were studied.

Safety lamps were improved, in part through studies of the bureau.

The subject of subsidence from coal-mining operations was investigated.

The study of smelter fumes and gases was continued and decided advance was made.

Investigations were conducted on safety and efficiency in the treatment of ores and minerals.

The study of the utilization of various low-grade ore deposits was begun.

A study was made of sampling and assay methods.

Metallurgical studies were conducted in connection with the safety and efficiency of various operations.

Advance was made in the investigation of the carnotite deposits of Colorado and Utah and the production from this ore of uranium, vanadium, and radium.

Some advance was made in the treatment of tungsten and molybdenum ores.

An investigation of building-stone deposits and quarry methods was begun, and reports on feldspar and on kaolin, fullers earth, and other clays or clay deposits were published or prepared for publication.

Savings in the cost of fuels purchased by the Government were effected through the method of purchase under specifications.

The economies of the gas producer were studied.

Peat and lignite were investigated with a view to their utilization as low-grade fuels.

Advance was made in the determination of the factors governing the clinkering of coal.

The origin and the constitution of coal were studied.

An expedition was made to the Matanuska coal fields, Alaska, for the purpose of collecting coal to be tested for use by the Navy Department.

Coal-mine waste problems, in their relation to suitable mining methods, were studied.

Investigations of mine gases and of natural gas were continued on a large scale.

More attention was given investigations relating to petroleum, and much waste of natural gas was stopped or prevented.

SOME BENEFICIAL RESULTS OF THE BUREAU'S WORK.

Probably the most notable accomplishment of the Bureau of Mines has been the developing of the movement for greater safety and better health conditions in the mining, metallurgical, and other mineral industries of the country and the gaining of the cooperation of all possible agencies in behalf of this movement.

All the cooperating agencies are entitled to share the credit for the resulting benefits. It is not possible to determine exactly how much credit should be given the Bureau of Mines, which has been in existence only a few years, nor can a money value be put on all that it has done. The scientific determination of the physical and chemical factors involved in processes or methods and the routine work incident to the many phases of the mining industry may be so intermingled with the general progress of the industry itself as to render segregation impossible. Moreover, the saving of human life is not a work the value of which can be measured in dollars.

In conducting its campaign for the increase of safety and efficiency in the mining industries there has been adopted the following general plan of cooperation between the National Government and other larger agencies. (1) That the National Government conduct the necessary general inquiries and investigations in relation to mining industries and disseminate in such manner as may prove most effective the information obtained and the conclusions reached; (2) that each State enact needed legislation and make ample provision for the proper inspection of mining operations within its borders; (3) that the mine owners introduce improvements with a view to increasing safety and reducing waste of resources as rapidly as the practicability of such improvements is demonstrated; and (4) that the miners and mine managers cooperate both in making and in enforcing safety rules and regulations as rapidly as these are shown to be practicable. The States, the miners and mine owners, and other agencies, such as the mining and engineering societies, are now showing a commendable willingness to cooperate with the National Government in this work.

During the last fiscal year Bureau of Mines rescue crews were responsible for saving the lives of 7 miners; in the same time, 63

rescues were made by miners and others not connected with the bureau. The training of these rescuers, for the most part, was started by the bureau and continued by the operators, or, in some cases, by the miners themselves.

That the mine-rescue and first-aid training and demonstration work of the bureau is resulting in good is beyond question. Many reports have been received of the beneficial results of first-aid training, not only as an object lesson in the prevention of accidents but in decidedly lessening infection of wounds and death after accidents. While this first-aid training is part of the educational work of the bureau, the fact is clearly recognized that other organizations are engaged in similar work, and that the work is being extended by the recipients of the training.

The furtherance of the work of betterment is in the hands of the leaders in the mining industry. To them, and to State officials, various organizations and societies, and to the miner himself, great credit is due for what progress has been made in rendering mining safer and less wasteful.

Attention is again called to the fact that the bureau is only one of several agencies working to accomplish a great end, and in offering the following summary of some of the beneficial results of the bureau's activities, thanks are tendered for the efforts and assistance of the individuals and organizations to whom reference has been made.

That the results already obtained warrant the expansion of the mine-safety work being done by the bureau is shown by statistics presented in another part of this report. In examining those figures the following facts should be remembered:

(1) That since the beginning of the mine-safety investigations of the Government, these investigations have been limited almost entirely to the study of mine explosions, which cause less than one-fifth of the total deaths in coal mines; and that the bureau's experimental mine which was needed to obtain decisive results in the explosion investigations was not ready for satisfactory work until 1913.

(2) Each year mines grow deeper and larger, the number of men employed in individual mines increases, and working conditions naturally become more hazardous from increasing gas, roof pressure, etc., so that, unless suitable safety improvements are devised and utilized, the death rate in mines will increase even faster than the mineral production.

THE NATURE AND PREVENTION OF COAL-DUST EXPLOSIONS.

When Congress first authorized an investigation of the causes of mine explosions few people in this country believed that coal dust alone could spread an explosion throughout a mine. Now, that the explosiveness of coal dust has been demonstrated by the bureau, through work in the laboratory, in the field, and in the experimental mine, the bureau's efforts are being directed toward the devising of effective and practical methods of preventing or arresting explosions. Through the development of rock-dust barriers and other devices, as described in another part of this report, the intensity of future coal-mine explosions will most certainly be decreased.

A careful study has been made of the inflammability of coal dust collected from hundreds of mines in different coal fields; a systematic investigation has been made of the possibility of coal-mine explosions starting from the improper use of explosives or the use of improper explosives, or from electric sparks, miners' lamps, mine fires, or other agencies; and various tentative conclusions and proposed recommendations regarding proper precautions are now being tested on a practical scale in the experimental coal mine 12 miles south of Pittsburgh. Through the lack of such an experimental mine properly equipped the progress of the work was delayed for several years; but during the past year the experiments in this mine have given promise of the early development of thoroughly practical preventive devices.

IMPROVEMENT OF MINING EXPLOSIVES.

In connection with its investigation of explosives the bureau has brought about what is little short of a revolution through the introduction of new types of low-temperature, quick-flame powders, designated as "permissible explosives," of which, during the past year, more than 25,000,000 pounds was used in the more dangerous coal mines of the country. Metal-mining explosives should be investigated thoroughly. As indicating the efficacy of certain of these investigations of explosives, the president of the company operating one of the largest metal mines of the country recently stated in a public address that the results of the bureau's explosives work, incomplete as it was, had brought about an actual saving to his company in this one mine¹ of \$80,000 yearly.

DEVELOPMENT OF MINE-RESCUE AND FIRST-AID METHODS.

The bureau, with the cooperation of miners and mine operators, has developed its mine-rescue and first-aid work into an agency for aiding the rescue of miners imprisoned by mine disasters, for training miners in rescue methods and in first aid to the injured, and in advancing the general movement toward greater safety in all branches of mining. It is in this work that the bureau has recorded its most notable achievements. Nearly 100 men have been rescued from mines by employees of the bureau, and a much larger number have been rescued by men who had received the bureau's training. Rescue and first-aid organizations have been established at many mines and more than 1,200 sets of rescue apparatus have been purchased by mine owners. The bureau itself now has eight mine-rescue cars traveling through the different mining districts in order to give instructions to miners in rescue, first aid, and safety methods. The bureau also has five mine-rescue stations in different coal fields from which it is carrying on similar work. Legislation now pending in Congress will, if enacted, provide for needed increase of equipment and personnel and permit the continuous operation of cars throughout the year. Not the least of the benefits resulting from the work of the mine-rescue cars and stations is the promotion of good citizenship among miners through the demonstration of the Government's interest in their welfare.

¹ The Treadwell mine in Alaska.

THE USE OF ELECTRICITY IN MINES.

Through the activity of the bureau in calling attention to dangers, heretofore unappreciated, in the use of electrical machinery in mines, manufacturers have devised safer types of apparatus and States have enacted stricter laws governing electric installations. An investigation of electric lamps for miners has resulted in greatly improving the types now offered for sale in this country.

OTHER MINE-SAFETY INVESTIGATIONS.

During the year the bureau began on a small scale to make investigations looking to the reduction of accidents caused by falls of roof and by caving in mines, by the lack or the improper use of safety appliances in mining and metallurgical plants, by the use of improperly installed electrical apparatus in mines and mills, and by the use of improper explosives and the improper use of explosives in metal mines, quarries, and tunnels. The humanitarian motives for undertaking such investigations are obvious. A sufficient economic reason is that during the past year more than 3,000 men were killed and more than 100,000 were injured in the mining and metallurgical industries of the country. One-half of these fatalities and three-fourths of the injuries may be regarded as easily preventable. The money loss from the accidents may be estimated at not less than \$12,000,000 a year, and this loss must be ultimately paid by the consumers of mineral products throughout the country.

MINERAL WASTE INVESTIGATIONS.

The investigations relating to mineral waste, which were begun much later than those relating to safety in mines, have been confined to certain general inquiries and to specific investigations dealing with such topics as the waste from smelters and other metallurgical plants, the waste in the treatment of rare minerals and metals, and the waste in the mining and utilization of coal.

REDUCTION OF LOSSES IN COKE MAKING.

A preliminary inquiry as to the coking of coal in beehive ovens has shown that the total value of the by-products annually lost in this country through the use of such ovens amounts to \$75,000,000. Although the desirability of developing by-product industries in this country has been recognized, such development has now become an actual need, and the bureau is preparing for publication a report on the progress already made in utilizing the by-products of coke making.

DETERMINATION OF WASTES IN BRASS-FURNACE PRACTICE.

The bureau has also ascertained that the annual waste of metals in brass-furnace practice amounts to over \$4,500,000, and has issued a report showing how this waste can be largely prevented by practical means.

LESSENERD WASTE OF NATURAL GAS.

As regards the bureau's work looking to the prevention of waste of natural gas, by an expenditure of less than \$15,000 during the past 18 months there has been brought about a saving of natural gas worth not less than \$15,000,000, a sum many times greater than the total cost of all the work done by the bureau during the four years of its existence.

PRODUCTION OF RADIUM.

Chemists and engineers of the bureau have demonstrated that a process they have devised for the extraction of radium from its ores can be successfully used on a large scale and will prove more efficient than that used by the largest foreign producers of radium. Through this process it is possible that the cost of radium to the consumer will be reduced to one-third of the present price. The process is to be patented and dedicated to the public.

OTHER INVESTIGATIONS OF MINERAL WASTE.

Other investigations dealing with mineral waste are already demonstrating the possibility of effecting on a commercial scale and without undue cost decided savings in the utilization of various minerals and metals. The need of such investigations should be obvious to anyone who remembers that the Nation has but one supply, and that unreplaceable, of these resources, and that the total wastes or losses in mining and utilizing our mineral resources now amount to more than \$1,000,000 a day.

FUEL INVESTIGATIONS.

In regard to the fuel investigations of the Government, these until recently have been largely limited to coal. The bureau has developed methods upon which the Government now purchases its fuel supply and has effected savings in the fuel expenditure of the Government that far exceed the total annual cost of the work. In 1914 the value of the coal purchased by the Government under specifications prepared by the Bureau of Mines or under the advice of the bureau was more than \$8,000,000. In the same year, as a result of the selection of fuels best adapted to particular heating or power plants, and the constant checking, through the use of samples, of the quality of the coal delivered, the saving to the Government was \$200,000 as compared with the prices paid in previous years. Moreover, the beneficial results of the purchase of coal under specifications have been perceived by many cities, and the savings reported by them last year amounted to thousands of dollars.

A further result of the bureau's fuel investigations is the compilation of a series of comparable analyses of the coals found in different parts of the United States, which are of the greatest value to Government engineers and purchasing agents and to all large users of coal.

The results of other fuel investigations published by the bureau have served as a basis for improving boilers such as are used to heat public buildings and for the development of a new type of power-

plant boilers. Moreover, these investigations have stimulated the development of more efficient gas producers. Investigations of house-heating equipment adapted to the needs of Army posts, naval stations, and public buildings under the Treasury Department throughout the country are developing results that must prove of great value to the heating of private buildings.

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WHERE THE BUREAU'S WORK IS DONE.

There has been no change in the various headquarters of the work of the bureau as reported in the last annual report, except in connection with the perfection of plans preparatory to letting contracts for the new experiment station in Pittsburgh when appropriations shall become available.

Through the cooperation and by the generous assistance of Gov. J. K. Tener, of Pennsylvania, the Legislature of Pennsylvania authorized an appropriation of \$25,000, available for two years, to be expended under a State commission for cooperation in erecting the experiment station of the Bureau of Mines in Pittsburgh. The members of the commission appointed by the governor are James E. Roderick, chairman, chief State mine inspector of Pennsylvania, Harrisburg, Pa.; Walter R. Calverly, mine operator, Pittsburgh, Pa.; and W. R. Crane, dean of the school of mines, State College, Pa. This commission authorized the employment, with the approval of the Supervising Architect of the Treasury Department, of a New York architect, Henry Hornbostel, to prepare from the State appropriation plans for the Government rescue station in Pittsburgh.

The act (Public, No. 432), approved March 4, 1913, providing for certain public buildings, authorized buildings for the experiment station at Pittsburgh to an amount not to exceed \$500,000, the buildings to be erected on Pittsburgh property owned by the Government, and acquired for this purpose, amounting to about 11½ acres, admirably situated in the center of the city. The act authorized a commission to have charge of the construction of the buildings, the commission to consist of the Director of the Bureau of Mines, the Chief of Engineers of the Army, and the Supervising Architect of the Treasury. This commission held several meetings during the year, viewed the site, conferred with the architect employed by the State, and on February 25, 1914, approved the plans submitted. As the estimates based on the plans exceeded the appropriation, the plans were revised and new ones were submitted to the commission the last of the fiscal year.

Unfortunately, even with the greatest economy in design and assignment of space to the various activities of the bureau, it is doubtful if the buildings that can be erected for this sum will adequately accommodate all of the employees now working in Pittsburgh and all the experimental work now in progress in the old arsenal buildings there. Consequently the new buildings will hardly provide for, even inadequately, any increase of employees consequent on transferring to this desirable central location investigations now temporarily housed elsewhere, and at an early date there may be need of providing for the erection of additional buildings on the new site.

ORGANIZATION OF THE BUREAU.

The bureau as now organized has an administrative, a mining, a mechanical, and a chemical division, and a division of mineral technology, each in charge of a division chief. In addition, the director of the bureau personally supervises several mining and metallurgical investigations.

ADMINISTRATIVE DIVISION.

The administrative division is in immediate charge of the director, Joseph A. Holmes, and the assistant director, Van H. Manning, who have offices in Washington, D. C. In this division are grouped those sections of the bureau that perform strictly administrative functions. The local administration of the mining-experiment station of Pittsburgh is intrusted to H. M. Wilson.

MINING DIVISION.

The mining division is in charge of George S. Rice, chief mining engineer, with headquarters at Pittsburgh. The work of this division is divided into mine-rescue and first-aid work; investigation and testing of safety lamps and rescue apparatus; studies at the experimental mine of the causes of mine explosions and means of preventing or limiting them; field investigations relating to coal-mine explosions; investigations relating to safety, health, mining methods, and mine waste in coal mines; investigations relating to health, safety, mining methods, and waste in metal mining; quarrying, stripping, and dredging; and inspection of Alaskan mines.

MECHANICAL DIVISION.

The work of the mechanical division, in charge of O. P. Hood, chief mechanical engineer, with headquarters in Pittsburgh, includes fuel and mine-accident investigations in laboratories and in the field, together with the supervision of the shops and power plant at the Pittsburgh experiment station.

The chief mechanical engineer had general supervision of the following investigations: Inspection of fuel purchased under specifications for the use of the Government; testing fuels belonging to the Government with special reference to efficiency, the prevention of smoke, and adaptability to the equipment of Government steam plants; studies of the combustion of fuel in furnaces and the transmission of heat into boilers; the utilization of low-grade fuels in gas producers; investigations of gas and oil well drilling methods; the use of electricity in mining and metallurgy; and investigations of mining equipment with especial reference to safety.

CHEMICAL DIVISION.

The chemical division, which was in charge of G. A. Hulett, chief chemist, with headquarters in Pittsburgh, exercises control over the chemical laboratories engaged in making the analyses and tests necessary for the conduct of certain of the fuel, mining, and metallurgi-

cal investigations that the bureau is pursuing. One of the laboratories—that for analyzing Government coal purchases—is in Washington, D. C.; the others are in Pittsburgh. In addition to making routine analyses of fuels, explosives, and mine gases and dusts, several of the laboratories are engaged in original investigations relating to problems of mine safety, the efficient utilization of fuel, and the prevention of waste in the mining, preparation, treatment, and utilization of mineral substances.

DIVISION OF MINERAL TECHNOLOGY.

The division of mineral technology, of which C. L. Parsons is chief, has headquarters in Washington and laboratories in Washington and Denver. The investigations being conducted by this division deal with the increase of safety and efficiency in the treatment and utilization of mineral products, and include investigations of rare metals (including radium), miscellaneous mineral substances, and nonferrous alloys.

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REPORT

OF THE

SECRETARY OF AGRICULTURE.

WASHINGTON, D. C., *November 14, 1914.*

SIR: Evidence abounds that more attention and more intelligent thinking are being directed to-day to the study of the fundamental problems in agriculture and in rural life than ever before. The last two years have been fruitful of significant State and Federal legislative and administrative measures designed to foster agriculture, to improve the distribution of agricultural products, and to better rural life. The people of the nation, urban and rural alike, are keenly interested in efforts to increase the supply of the necessities of life, and recognize the supreme importance not only of making agriculture efficient and profitable, but also of making rural life comfortable, healthful, pleasurable, and attractive. Agriculture has made marked progress in a number of directions, but as an industry it has not kept pace with the other activities of the country. Relatively speaking, there has been a neglect of rural life by the nation. This neglect has perhaps not been conscious or willful. We have been so bent on building up great industrial centers, on rivaling the nations of the world in manufacturing and commerce, fostering these by every natural and artificial device we could think of, so busy in the race for populous municipal centers, that we have overlooked the very foundations of our industrial existence. It has been assumed that we have a natural monopoly in agriculture—that it could take care of itself, and for the most part we have cheerfully left it to do so.

The direction and emphasis of the national thought is changing, and we are witnessing the marshaling of many forces in the struggle for greater prosperity and for better conditions of living in the rural districts. We are witnessing a great increase in the expenditure of money to foster agriculture through all sorts of scientific and practical measures on the part both of the States and of the Federal Government. Material results are forthcoming, and while great

civilized nations of the world are in the throes of a deadly and destructive war, the farmers of every section of the Union except one are prosperous and are enjoying their work and its fruits free from the burden of militarism and the threat of wholesale destruction of life and property. Thoughtful men can not fail to be optimistic over the agricultural situation and prospects, but optimism must not blind us to certain shortcomings.

PRODUCTION.

The progress of agriculture reveals itself more particularly in its diversification, in the rise of minor crops to larger proportions, than in the increased production of staple products. For example, dairying in the last generation has become an exceptionally important branch of agricultural economy, the annual production including more than one and a half billion pounds of butter, a half billion pounds of condensed milk, and a third of a billion pounds of cheese, having a value of approximately \$600,000,000. The production of orchard fruits exceeds 216,000,000 bushels a year, with a value of more than \$140,000,000. The value of the annual production of vegetables is in excess of \$400,000,000. The production of hay and forage approximates 100,000,000 tons, with a value in excess of \$800,000,000; the poultry products of the United States have reached a point where their annual value is about one-half that of the cotton crop at normal valuations, and marked increases are noted in the quantity and value of the cereals.

The following table is suggestive. Special attention is directed to the statistics of quantity no less than to those of value. Census data for later years than 1909 are not available, but the indications are that the upward tendency in the production of all the commodities included in the table except corn has persisted.

Comparison of acreage and production of various farm products in 1899 and 1909.

[Taken from the Twelfth and Thirteenth Censuses.]

Product.	1899			1909		
	Acreage.	Production.		Acreage.	Production.	
		Quantity.	Value.		Quantity.	Value.
Cotton.....bales..	24,275,101	9,534,707	\$323,758,171	32,043,838	10,649,268	\$703,619,303
Cereals:						
Corn.....bushels..	94,913,673	2,666,324,370	828,192,388	98,382,665	2,552,189,630	1,438,553,919
Oats.....do....	29,539,698	943,389,375	217,098,584	35,159,441	1,007,142,980	414,697,422
Wheat.....do....	52,588,574	658,534,252	369,945,320	44,262,592	683,379,259	657,656,801
Barley.....do....	4,470,196	119,634,877	41,631,762	7,698,706	173,344,212	92,458,571
Rye.....do....	2,054,292	25,568,625	12,290,540	2,195,561	29,520,457	20,421,812
Rough rice...do....	342,214	9,902,886	6,329,562	610,175	21,838,580	16,019,607

Comparison of acreage and production of various farm products in 1899 and 1909—Con.

Product.	1899			1909		
	Acreage.	Production.		Acreage.	Production.	
		Quantity.	Value.		Quantity.	Value.
Dairy products.....			\$472, 276, 783			\$596, 413, 463
Milk.....gallons.....		7, 265, 804, 304			5, 813, 699, 474	
Butter (made on farms)...pounds.....		1, 071, 626, 056			994, 650, 610	222, 861, 440
Cheese (made on farms)...pounds.....		16, 372, 318			9, 405, 864	1, 148, 708
Poultry and eggs.....			281, 070, 693			509, 195, 232
Animals slaughtered on farms.....			189, 809, 229			270, 238, 793
All fruits.....			131, 098, 790			217, 576, 542
Orchard fruits, bushels.....		212, 365, 600	83, 750, 961		216, 083, 695	140, 867, 347
All vegetables.....			238, 531, 761			418, 110, 154
Potatoes....bushels..	2, 938, 778	273, 318, 167	98, 380, 110	3, 668, 855	389, 194, 965	166, 423, 910
Hay and forage, tons.....	61, 691, 069	79, 251, 562	484, 254, 703	72, 280, 776	97, 453, 735	824, 004, 877

¹ As reported from 16,069,298 dairy cows out of a total of 20,625,432 dairy cows. At this rate the total production of milk in 1909 would be 7,462,000,000 gallons.

We know that the wheat crop of 1914 of approximately 892,000,000 bushels is the greatest ever produced in our history, and that the crops of oats, barley, rye, potatoes, tobacco, and hay are unusually large. The cotton crop, forecast in October at 15,340,000 bales, is the second largest. The apple crop, estimated at 259,000,000 bushels, is the greatest ever harvested. The total production of six leading cereals is estimated to have been nearly 5,000,000,000 bushels, or about 428,000,000 bushels in excess of the crop of 1913. For the country as a whole the crop yields per acre were 2.3 per cent better than the average for the past 10 years. The average yield per acre of all the staple crops was 9.4 per cent greater than 1913, and, except for corn, oats, and flaxseed, greater than the 10-year average.

But after all our efforts, while there is an increased diversification of agriculture and both a relative and absolute increase in important products, such as wheat, forage crops, fruits, dairy products, and poultry, we still note not only a relative but also an absolute decrease in a number of our important staple food products, such as corn and meats. In the former, in the last 15 years there has been no substantial advance. In cattle, sheep, and hogs there has been an absolute decline—in cattle, from the census year of 1899 to that of 1909, from 50,000,000 head to 41,000,000; in sheep, from 61,000,000 to 52,000,000; in hogs, from 63,000,000 to 58,000,000. Since 1909 the

tendency has been downward, and yet during the period since 1899 the population has increased over 20,000,000. This situation exists not in a crowded country, but in one which is still in a measure being pioneered, in one which, with 935,000,000 acres of arable land, has only 400,000,000, or 43 per cent, under cultivation, and in one in which the population per square mile does not exceed 31 and ranges from 0.7 person in Nevada to 508 in Rhode Island.

Just what the trouble is, no one is as yet sufficiently informed to say. It can scarcely be that the American farmer has not as much intelligence as the farmer of other nations. It is true that the American farmer does not produce as much per acre as the farmer in a number of civilized nations, but production per acre is not the American standard. The standard is the amount of produce for each person engaged in agriculture, and by this test the American farmer appears to be from two to six times as efficient as most of his competitors. Relatively speaking, extensive farming is still economically the sound program in our agriculture, but now it is becoming increasingly apparent that the aim must be, while maintaining supremacy in production for each person, to establish supremacy in production for each acre. The continued solution of the problem here suggested is one which now seriously engages the attention not only of the agricultural agencies of the several States but also of the Federal Government.

Through every promising approach the Department of Agriculture is studying and attacking the problem of increasing production. Through breeding and selection, the improvement of cultural methods, and the control of plant diseases, experts in plant industry are lending their assistance. They are introducing new crops and better varieties of existing crops from other parts of the world, including drought-resistant plants for the semiarid regions of the West and better forage crops for the South; they are breeding higher yielding varieties of staple and other crops; they are indicating better cultural methods and practices, encouraging standardization, and suggesting utilization and disposal of crops in such manner as to make them yield an adequate return to the producer; they are stimulating the citrus-fruit industry; and they have produced by hybridization new and comparatively hardy types of citrus fruits which will become important additions to the home supply of useful fruits, especially in the Southern States. They have established new plant industries in various parts of the country, such as date and cotton growing in Arizona and the Imperial Valley of California. They have pointed the way to the continued successful growing of cotton in boll-weevil districts. They are protecting the farmer against seed adulteration. In cooperation with other agencies, especially the Federal Horticultural Board, they are taking effective steps to safe-

guard the great potato industry of the nation. They have developed grain and cotton standardization to the point where beneficial results can be secured not only in further production, but also in more just and efficient distribution.

In like manner the experts of other bureaus have labored efficiently for the increased production of farm crops. The entomologists have pointed the way to the control or the extermination of many harmful insects. They have developed means for the control of the alfalfa weevil, assisted in the protection of crops against damage by chinch bugs and the Hessian fly, developed sprays for controlling deciduous-fruit insects, and lessened the injury to orchards by the apple-tree borers. They have devised protection against the tobacco hornworm, carried on successful work in the eradication of the Rocky Mountain spotted-fever tick, studied the control of insects conveying disease to human beings, and rendered other service of marked value.

The experts of the Bureau of Soils have continued their studies of soils and have prosecuted their investigations into additional sources of fertilizer supply. They have extended the work of surveying and mapping the soil areas of the United States, having surveyed and mapped in detail since the inauguration of the work 329,539 square miles, or 211,000,000 acres, and, in addition, have made reconnoissance surveys of 434,000 square miles, or 278,000,000 acres.

THE MEAT SUPPLY.

The experts of the Bureau of Animal Industry have intelligently and zealously prosecuted their tasks, but it remains true that this country faces a serious situation in the matter of its meat supply. Just what factors have brought this situation about no one can define with certainty, and no systematic attempt to define them has been made until recently. Realizing the urgency of the problem, I have appointed a committee, consisting of the best authorities I could discover, to study the subject. This committee is making a survey of the whole field and will report at the earliest practicable moment. Its study embraces an investigation of production and consumption and of the methods of producing, finishing, and marketing meat. When a conclusion is reached, such measures as may be helpful for increasing production and bettering distribution will be inaugurated.

In the meantime, however, certain things are clear, and definite plans for increasing the meat supply are in operation and can be continued with promise of large results.

It is evident that we have been considering the meat supply of the nation too exclusively in terms of the big ranch and of beef animals. Obviously it is important that we continue to help the cattlemen and to assist in further developing the big ranch. No pains will be

spared to do this. The department is now spending money to develop the live-stock industry in connection with the reclamation projects and is asking for more. But unquestionably the largest hope for a considerable increase in our meat supply lies in four other directions: First, in a more satisfactory handling of the public grazing lands; second, in systematic attention to the production of beef animals in the settled farming areas of the country, particularly in the South; third, in increased attention to the smaller animals, such as swine and poultry; and fourth, in the control and eradication of the cattle tick, hog cholera, tuberculosis, and other animal diseases and pests.

The present methods of transforming the grasses of the public grazing lands into beef and mutton are generally conceded to be wasteful. It is estimated that under a proper system the quantity of beef and mutton produced on these lands could be increased by at least 50 per cent. The public grazing lands, in addition to 150,000,000 acres in the National Forests, embrace about 300,000,000 acres. Under the present laws any person may graze any number of stock at any time on any part of these 300,000,000 acres of the public grazing lands or grazing lands outside of National Forests. In earlier years, when there were comparatively few cattle on the range, the treatment of the lands as common worked fairly well, but the increased domestic and export demand for meat has resulted in overgrazing. Unseasonable and excessive grazing weakens the vitality of the range plant and permanently reduces the crop. Furthermore, as years have passed the area of the grazing lands has been greatly reduced through the taking up of homesteads, and in many cases the better lands were thus disposed of. There is no doubt that under legislation providing for an intelligent system of handling grazing lands a very large increase in the meat supply of the nation can be secured. This is not mere conjecture. The opinion is based on the experience not only of the State of Texas in handling its public lands, but also on that of the Federal Government in the management of the grazing lands in the National Forests.

For 10 years the United States Government has been conducting a successful experiment in the forests. So quietly has this experiment proceeded that few people have known even of its inauguration, recognized its importance, or appreciated its results. Under the Forest Service system, annual grazing permits, with the necessary regulatory provisions, have been in force for nearly a decade. The results have been striking. In 1905, 81 acres supported but one animal; in 1913, the average was one animal for each 51 acres. This increase of 59 per cent has been due to many factors which can not be detailed here. The net results are that the grazing lands in the forests under permits to nearly 29,000 live-stock growers support 1,600,000 cattle

and horses, with their calves and colts, and 7,600,000 sheep and goats and their lambs and kids. In addition, the forest ranges furnished temporary grazing to millions of other animals which passed through the forests under crossing permits. The capacity of the range has not been reached. There is room for more animals on this part of the public domain. It has been demonstrated that under systematic management the grazing value of the lands can be restored and increased, that the range can be made to produce heavier animals, even with increased numbers, and that these lands can be improved faster in use than in idleness. Even with the very moderate grazing fees charged, the stockmen pay the Government over \$1,000,000 annually. Their gross receipts probably exceed \$30,000,000, and their invested capital is more than \$100,000,000. A proof of what this constructive handling of the range problem signifies may be found in the desire of many stockmen to have the department's system of grazing extended to the open public range outside the National Forests.

There is no question that the average farmer in the settled areas of the United States generally, North, East, South, and West, can produce without great expense a larger number of beef animals, if only as by-products, to the betterment of his farm economy. In this direction the farmer in the South enjoys unusual opportunities. It is further apparent that farmers everywhere, if they will apply existing knowledge, can largely increase the supply of swine and poultry products, which constitute a large and growing part of the consumption of the average family. In no other way can a considerable addition be so quickly made to our meat supply as through increased attention to poultry and swine on all the farms of the nation, and particularly in the South, where the deficiency is so marked. The annual value of the poultry products alone aggregates half a billion dollars, or 50 per cent of the total value of the cotton produced in the United States. The last census, however, shows a lamentable neglect of live stock in the South. While in Iowa the average farm has 6 milch cows, in North Carolina and Alabama it has less than 2, and in South Carolina 1. While in Iowa the average farm has 35 hogs, in North Carolina and Alabama it has less than 5, and in South Carolina less than 4. While in Iowa the average farm has more than 108 head of poultry, in North Carolina and Alabama it has less than 20, and in South Carolina less than 17. An investigator has recently said that the average farm home in Georgia produces less than 2 eggs a week; about two-thirds of an ounce of butter and two-thirds of a pint of milk a day; one-third of a hog, one-twelfth of a beef, and one one-hundredth of a sheep a year for each member of the family; and that the cotton crop of the State does not pay the State's food and feed bill. No Southern State is giving sufficient attention to the production of foodstuffs

either for human beings or for live stock. A conservative estimate indicates that Texas imports from other States annually more than \$50,000,000 worth of wheat, corn, and oats; Georgia more than \$24,000,000; South Carolina more than \$20,000,000. Twelve Southern States import more than \$175,000,000 worth of these three commodities and \$48,000,000 worth of meats, dairy products, and poultry products. It may be admitted that most of these States should not undertake the production of these commodities for foreign or interstate shipment in competition with the great States of the Middle West, but every student of the subject must recognize the unwisdom of the neglect to produce enough of these things for the consumption of their people and for the laying of the foundation of a prosperous live-stock development.

Too exclusive devotion to a single crop anywhere is unwise for normal times and spells disaster in times of disturbance. It is bound to produce just such a catastrophe as has befallen the South in the present emergency. It prevents the full utilization of land and labor, fails to fill the gaps in the work schedules, and furnishes no reserve.

If farmers in the South had heretofore practiced diversification on a sufficiently large scale, producing their own home supplies, that section would not be in its present hard case. The experts of this department are laboring earnestly to bring about a better direction of the agricultural activities of the South. If this is especially successful the coming season, and a much larger part of the land, labor, and capital of the South is devoted to the production of foodstuffs, relief will be afforded in this emergency, and there will be promise there of a permanent, wiser farm economy. This undertaking will require the cooperation in the South of all the agents of the department, of the farmers, of the business men, and of the bankers. If the department had available an additional \$100,000 or \$150,000 with which to place a number of experts in live stock, marketing, and other subjects in the field, much greater headway could be made.

But an easier and more definite program for a large increase in the meat supply involves the eradication of the cattle tick, of tuberculosis, and of hog cholera, and the prompt suppression of serious outbreaks of such diseases as the foot-and-mouth disease. The Federal Department of Agriculture inspects meats passing into interstate commerce. Of 57,000,000 animals inspected in the fiscal year 1914, 533,000 were found to be infected with tuberculosis. This disease is increasing. It is estimated that hog cholera caused a loss in 1913 of over 6,000,000 hogs, valued at more than \$60,000,000, and that the cattle tick causes an annual loss of from \$40,000,000 to \$100,000,000 or more and prevents the proper development of the live-stock industry in the infected area.

The department is now directing the expenditure of a fund of \$500,000 for the eradication of hog cholera, and many of the States are likewise spending considerable sums. The two agencies are working in cooperation and are making experimental and field demonstrations in the control of this disease. Unquestionably the appropriation of half a million dollars for the eradication of hog cholera should be continued.

The work of tick eradication is progressing. It has resulted to date in the clearing up and freeing of 220,000 or more square miles, an area exceeding that of Georgia, Florida, Alabama, and Mississippi combined, or greater than that of France or Germany. There still remains an area about double that of the State of Texas, or more than twice that of Germany or France, which is still infested. A more vigorous effort with larger funds for the clearing of this area would be wise economy.

Other animal diseases interfere seriously with meat production, and from time to time great actual loss in cattle and hogs and still greater disturbance of industry are caused by the foot-and-mouth disease. This disease affects cattle, sheep, other ruminants, and swine. It manifests itself by abnormal elevation of temperature and by ulcers or vesicles in the mouth and on the feet. It is not necessarily fatal, but frequently affects very seriously the value of the animals. There were outbreaks of foot-and-mouth disease in this country in 1870, 1880, 1884, 1902, and 1908. Since the close of the fiscal year 1914 the sixth outbreak has occurred. The first three, those in 1870, 1880, and 1884, were comparatively trifling. Those in 1902 and 1908 were more grave. The present is the most serious and extensive of all.

In 1902 the outbreak occurred in the New England States. In 1908 it originated in Detroit. The origin of each of these outbreaks was traced to the importation of vaccine virus for the propagation of vaccine for use in vaccinating people against smallpox. The vaccine virus was imported from Japan, where the foot-and-mouth disease exists. Each of these outbreaks was stamped out by methods which have proved most effective in preventing the disease from gaining a footing. These methods involved the killing of all infected and exposed animals, the burying of the carcasses, and the thorough disinfection of all premises with which the animals may have come in contact.

On October 18, 1914, the Bureau of Animal Industry of this department learned that cattle in the vicinity of Niles, Mich., were infected. It was thought for a time that the trouble might be confined to two counties in Michigan and two adjoining counties in northern Indiana, but evidently before the disease was reported and before it was diagnosed shipments of infected animals passed

through the Chicago stockyards. Upon tracing shipments from these yards animals infected with the disease were found at points in Michigan, Indiana, Ohio, Wisconsin, Pennsylvania, Maryland, New Jersey, Kentucky, Iowa, and Massachusetts. Subsequent points of infection have been discovered. The existence of the disease in Montana has been traced to animals from the infected area in Wisconsin, and its existence in Washington has been traced from animals which crossed the trail of the Montana herd. The department has taken every step possible to control the disease and to prevent its spread. It has worked in close cooperation with the State authorities and with great numbers of individuals and of associations of individuals. It has pursued its former policy of purchasing diseased and exposed cattle at an appraised value and of slaughtering and burying them. It has established and maintained a very strict quarantine. The expense of this task will be very great, and it will be necessary to ask the Congress for an emergency appropriation of several millions of dollars. The interests at stake are vast and justify any reasonable expenditure.

It is not possible at the present time to state positively what the origin of the present outbreak was. The disease is highly contagious. It may be carried by birds, dogs, cats, rats, or ruminants, or by human beings passing over territory which diseased animals have traversed. Horses going over infected ground may convey the disease in dirt adhering to their feet. When one animal in a herd becomes affected it has usually spread to all the others. As has been stated, the outbreaks in 1902 and 1908 were traced to vaccine virus. The most plausible suggestion as to the origin of the present outbreak is that it was introduced with importations of an article used in tanning. This article is imported from several countries. There is in the vicinity of Niles, Mich., a small tannery using the article in question, and swine owned by employees of the tannery kept in this vicinity were the first animals known to have contracted the malady. Since the disease exists in a great part of Europe, in the Orient, in South America, and other places, there will be danger so long as there is any trade or travel with such countries. Apparently the only certain way to prevent the introduction of the disease into this country from abroad is absolutely to isolate this nation from others. The only reasonable thing which can be done is to enforce as carefully as possible the inspection laws, to give the Department of Agriculture sufficient authorization and emergency funds to cope with the disease when it does appear, and to institute such scientific inquiry and experiments under absolutely safe conditions as may be practicable in an attempt to discover the cause of the disease and to ascertain and apply the remedy. The present situation suggests the wisdom of

legislative action to this effect. If the interval between the sessions of Congress had been longer, the department would have been without adequate funds to deal with the problem.

FARM ECONOMICS AND BUSINESS METHODS.

A different but strikingly important aspect of production and of farm operations is the application of economic principles and of sound business methods. This subject has received little consideration. In every other industry successfully prosecuted the employment of sound business principles from the outset is regarded as a prerequisite. In this direction, as in others, farming has lagged behind, and the several farming activities have been too largely conceived as being separate rather than as closely interrelated. It is highly necessary that the farmer, as well as any other business man, should know at all times just how his business stands, what parts are profitable, what unprofitable, and how he should redirect his activities to assure success. For this purpose the farm must of necessity be looked upon as a whole. It is the object of the Office of Farm Management to do this. The service of the economist should be enlisted in all our agricultural undertakings. All agricultural enterprises and the work of all agricultural establishments are economic in their character, and yet it is true that up to the last two years neither the farm as such nor any institution or establishment dealing with the farm has invoked the assistance of the economist. For the most part the economist has not realized the obligation resting upon him and has paid scant attention to the urgent economic problems in the field of rural life. It is probably true that not more than 10 or 12 of the economists of this country could qualify as experts in rural economics. Their attention has been somewhat exclusively absorbed by problems growing out of the industrial life of the nation and out of its international relations. The emergence of acute business problems in agriculture and the complexity of the problems of distribution and organization justify a different attitude on the part both of the economist and of the authorities responsible for agricultural leadership. The inauguration of work in farm management is a hopeful indication of change.

The business of the student of farm management is to make an analysis of the operations of the farmer, to study the proper adaptation of the type of farming to local conditions, such as soil and climate, the size of the market, market demand and transportation, the quality of the farm business, its diversity, its organization, the distribution of farm enterprises, and the costs of each sort of product. The investigations of the Office of Farm Management are yet in their infancy, and there is much to learn in this branch of agricul-

tural science, but the inquiries thus far pursued furnish a deeper insight into the causes of success and failure in farming and give promise of helpful results in the increase of production on a profitable basis.

DISTRIBUTION.

A constructive agricultural program must of necessity contemplate distribution as well as production, and, vital and urgent as are the direct problems of production, even more important in a sense and more immediately pressing are the problems of distribution and marketing. The solution of problems in this field is essential not only for the increase of production but also for the elimination of injustice, and for the guaranty, on the one hand, to the producer that he shall receive a fair reward for his labor and the right value for the specific product which he sells, and, on the other, to the consumer that he shall receive the exact commodity for which he pays a specific price. The attempt by governmental agencies to solve problems of distribution and marketing is recent. Considerable headway has been made, and the indications are that the thought both of the State and of the nation has been keenly aroused and that further effective measures will be adopted. One of the greatest weaknesses of American agriculture at the present time arises from the lack of a knowledge of the facts of distribution, of business organization, of cooperation, and of resident leadership. Attention has heretofore been directed to the new enterprises of the department in marketing, in cooperation, rural credit, and the general organization of rural communities for their intellectual, sanitary, and social betterment. Already the Congress has laid the foundation for work along these lines by making available a fund of \$240,000 and by enacting the Cotton Futures Act.

Other measures of great importance, such as those dealing with cotton standards, grain standards, a permissive warehouse system, and land-mortgage banks, have been pushed toward completion. Generally speaking, all these measures have for their object the elimination of waste, the systematizing of the processes of distribution, the injection of adequate business methods into these activities, and the development of the requisite degree of business cooperation among farming units. Several of these measures merit further comment.

MARKETING.

Sufficient indication of the scope of the work of the Office of Markets was given in the department's last annual report. Initiated a little more than a year ago with an appropriation of \$50,000, an expansion was made possible by the increase in the amount to \$200,000 in the current appropriation for the department. In a new and untried

field of this kind the first concern must be to secure the requisite number of trained men, very difficult to find, who can undertake efficiently the several lines of investigation. The organization has now reached a fair stage of development and is actively prosecuting its tasks. It has obtained much reliable information concerning cooperative marketing and purchasing. It has demonstrated that cooperation in some form is much more prevalent in the United States than is generally believed. A record of more than 8,500 marketing associations, about 2,700 cooperative and farmers' elevators, 2,500 cooperative and farmers' creameries, and more than 1,000 cooperative fruit and produce associations has been secured. While the survey is not complete, it is reported that over a billion dollars' worth of agricultural products are annually marketed by cooperative and farmers' marketing associations.

The majority of these associations have furnished the office detailed statements of their plans of organization, of the products handled, of the forms of business, and of other important items, including constitutions, by-laws, and financial statements. The conclusion seems justified that in communities where farmers' associations are properly constituted and operated better results are obtained than under a system of individual handling. Advantages present themselves in the standardizing and packing of products and in the discovery of the best daily market. Much information has been secured as to the laws of the various States under which such organizations may be created. The effort is being made to determine the principles on which the enterprises that have succeeded have operated and those upon which the enterprises that have failed have proceeded. The business practices of the enterprises have been carefully considered, and the results of investigation are being tabulated and formulated. At the earliest possible moment the results will be incorporated in circulars and bulletins. Likewise, inquiries have been set on foot concerning market centers, the market surplus, the rate of movement, the outlets for commodities, the prices of specific products by definite trade areas, and the possibilities of increasing distribution in an economical way.

Lists of producers, producers' organizations, shippers, transportation agents, and officials from whom information on specific perishable products may be secured are being compiled. For example, the records show that the number of points from which commercial shipments are known to originate for certain specific products are as follows: Strawberries, 900; peaches, 1,800; tomatoes, 600; cabbage, 1,700; onions, 1,500. A special inquiry has been made concerning the commercial storage of cabbage and onions in the North, to guide growers in southern areas. In all these directions information has been furnished to producers in different sections. There have

been special investigations of the marketing of peaches and cantaloupes in Georgia; of cantaloupes and truck crops in North and South Carolina; of cantaloupes, strawberries, and truck crops in Virginia; of peaches, cantaloupes, and strawberries in Delaware; of peaches in Maryland and West Virginia; of peaches, strawberries, and truck crops in New Jersey; of peaches and truck crops in Pennsylvania; of potatoes in Maine; of cantaloupes and cabbage in Colorado; of truck crops in Mississippi and Texas, and of fruit and potatoes in Arkansas, Missouri, Tennessee, and Kentucky. Much advice and assistance have been furnished to growers in these sections.

City marketing and distribution, including the various types of public markets, wholesale terminal markets, and auctions and other methods of distributing food products in cities, have likewise been the subjects of investigation. At Jackson, Mich.; Providence, R. I.; Trenton, N. J.; Philadelphia, Pa.; St. Louis, Mo.; and Jersey City, N. J., in response to requests from city officials or producers' organizations, the municipal public market situation has been analyzed. Personal investigations have been followed by extensive reports containing specific advice regarding suitable types of markets, their design, cost, construction, and advantageous location, the arrangement of transportation facilities, and many other details. Municipally and privately owned public retail markets, producers' wholesale and retail markets, wholesale terminal markets, and auctions have been studied in Boston, New York, Norfolk, Baltimore, Washington, Albany, Rochester, Buffalo, Cleveland, Detroit, Chicago, Madison, Pittsburgh, Cincinnati, Columbus, Toledo, Dubuque, Des Moines, Kansas City, and Denver. Details have been secured of market costs, maintenance, construction, sanitation, location, offerings, prices, and the service, or lack of it, which these markets render the people.

A special object of inquiry has been the possibility of marketing by parcel post and express. Many experiments have been conducted by sending, receiving, and examining experimental shipments. Exhibits have been made at many gatherings. The first experiments in this direction were made with eggs, in family-size lots, the results of which have been published in *Farmers' Bulletin* No. 594. It has been found that where proper care in packing and handling commodities is exercised the marketing of certain products by parcel post and express can be profitably undertaken.

The marketing of live stock, of meats, and of animal by-products has been investigated. The object has been to determine the relative efficiency of the marketing of beef cattle in the central and local markets in the various producing areas of the United States, and to ascertain in what particular improvements may be made.

The areas selected for these studies were the East, the South, the corn belt, the Northwest, the Southwest, and the Pacific slope. Data have been obtained chiefly by selecting typical shipments of cattle whose approximate cost of production is known, by following them from the farm, ranch, or plantation through the stockyards, packing houses, and wholesale and retail markets to the consumer, and by keeping itemized accounts covering the transportation, selling, and slaughtering of the live stock and the distributing and retailing of the beef. As far as possible, normal factors of loss, such as mortality, shrinkage, condemnations, bad accounts, and depreciation, and also items of expense which the consumer must pay indirectly, such as rent, heat, light, handling, storage, cutting, and delivery, have been considered in these statements. In this manner 12 lots of beef cattle have been traced from Oregon, Montana, Kansas, Texas, Alabama, Illinois, and Virginia to the open market at Portland, Oreg., Fort Worth, Kansas City, East St. Louis, Chicago, and Baltimore. The beef yielded by the cattle has been followed to its destination, the principal shipments having gone to Portland, Oreg., Seattle, Indianapolis, Fort Wayne, Detroit, Cleveland, Baltimore, Jersey City, New York, Brooklyn, Providence, Boston, and a number of smaller eastern cities, and ultimately having been sold to family, hotel, restaurant, and dining-car trade.

Information has also been obtained relative to the methods and cost of dressing and handling beef by local butchers in various sections and under various conditions. Tests of this kind have been arranged at Urbana, Ill.; Auburn, Ala.; South Haven, Mich.; at the municipal abattoir at Paris, Tex.; and at the farmers' cooperative packing house at La Crosse, Wis.

A directory and descriptive file of all centralized live-stock markets in the United States, including their railroad facilities, stockyard equipment, selling agencies, buying interests, number and character of receipts and shipments, and the sources of supply and outlets for finished meat products and by-products, is now being compiled.

Further investigations and a more complete analysis of the facts in hand will be necessary before definite conclusions can be stated as to the relative cost of transporting, slaughtering, wholesaling, and retailing beef, and the extent to which the cost may be reduced in each instance. Each of the large markets draws its supplies from at least several States, and some of them from a larger area. During the present grass season, for example, Chicago has received Mexican, Canadian, and Florida cattle at about the same time. Steers raised in California by an Oregon operator have been shipped through Denver to Omaha and the beef sent to points on the Atlantic coast. Hogs raised in Illinois and sold at Indianapolis have been slaughtered at Boston and a part of the cured bacon shipped to Los Angeles.

Michigan dressed veal calves expressed to South Water Street commission houses at Chicago have been returned to the identical shipping points from which they came to fill orders from local retail markets. The importance of this work and the results thus far obtained justify a larger support of this service, especially as its organization has now progressed to the point where it is possible to utilize ampler funds with the requisite efficiency.

GRAIN AND COTTON STANDARDS.

The matter of the standardization of grades of grain and cotton is of great practical consequence to the farmer and to farming. This is a work upon which the experts of the Bureau of Plant Industry have been engaged for years. During the last year the inadequacy of the data accumulated with regard to corn made possible the formulation and promulgation of grades for that grain which, if generally adopted and uniformly applied throughout the country, will simplify the relations between producers, dealers, and consumers. Under these grades, fairly used, the grower or shipper of a superior quality of grain will be in a position to demand from the buyer the fair value to which the quality of his product entitles him. On the other hand, the producer of a product of inferior quality will receive a lower return.

The beneficial influence upon agriculture of a uniform system of grading staple crop products will be very great through the financial incentive afforded the farmer to improve the quality of his product by the careful selection of varieties, skillful culture, and adequate and effective methods of harvesting, handling, and protecting it while in his hands. Advice that he improve his methods, no matter how sound and well intended, will not make and ought not to make much impression upon him unless it can be clearly demonstrated that it will pay him to improve his product and his handling methods. Concrete evidence of the profitableness of this course in the form of larger net returns for his output will do more than any other single factor to arouse action and effective interest in crop improvement. Investigation of the handling and standardization of other staple grains, particularly wheat and oats, is proceeding. It is gratifying that a considerable proportion of the State grain-inspection departments and commercial organizations maintaining grain-inspection departments located in the grain belt and the Gulf coast sections have already adopted the Government grades for corn or have declared their intention to adopt them.

In addition to the continuance of the preparation and distribution of standard grades for cotton, promulgated under statutory authority some years ago, investigation of the spinning value of those grades

has recently been undertaken with a view to determine as accurately as possible the relative value of the various grades through tests conducted on a commercial scale. Methods of determining the exact length of staple of cotton have been developed, which may eventually be applied in the cotton trade. Measures for securing the adoption of grain and cotton standards in trade have occupied much of the time of the Congress, and the indications for their enactment into law are favorable.

WAREHOUSE SYSTEM.

Another proposal is that for a permissive warehouse system for grain and for cotton. The study by the department of the warehousing of grain has not proceeded as far as its study of the warehousing of cotton, but this work is being prosecuted actively, and the results should be available in the near future. Interesting results have already been furnished by the investigation of the cotton warehousing situation. A detailed survey of the State of Georgia shows that there are in that State more than 1,000 warehouses in operation. Reports from 700 of these give a storage capacity of 1,200,000 bales uncompressed. The remaining 300 probably have a total capacity of at least 300,000 bales. To these may be added the storage houses belonging to the cotton mills of the State, which take care, approximately, of 400,000 bales. In North Carolina there are 129 warehouses, with a storage capacity of about 200,000 bales, and the mills of the State can store 375,000 bales. The situation in South Carolina, Alabama, and Mississippi is similar to that in Georgia. Virginia, Tennessee, Florida, Louisiana, and Texas have warehouses with a storage capacity exceeding the annual production, but these are located for the most part at shipping points, such as Norfolk, Memphis, Jacksonville, Pensacola, New Orleans, Houston, and Galveston.

Comparatively few of the small towns have warehouses. Taking the entire cotton belt, it is probably true that the warehouses now in existence could store the cotton that would be offered during any ordinary season, but the warehouses are not evenly distributed. Most of them are constructed without reference to the standards recognized by underwriters and have to pay a high insurance rate. Few of them are bonded, and financial institutions which might advance money on cotton certificates from bonded warehouses are cautious in dealing with them. If the warehouses in existence were remodeled so as to comply with the underwriters' requirements and were bonded, and if adequate business methods were adopted, the financing of the cotton crop would be materially improved. Such a system would furnish relief in times of emergency and would form

a useful part of a normal distributive system. It is probable that a Federal law for a permissive warehousing system would stimulate this desirable development.

COTTON FUTURES ACT.

The Cotton Futures Act is the first definite, systematic, legal approach to the solution of difficult problems in this field of distribution. Interest in the economics of the cotton situation has grown rapidly in recent years and has been especially marked during the present season because of the difficulties arising out of the European war. For many years there has been a growing dissatisfaction with the future markets as a means of price insurance. The demand for reform in certain practices and methods of the exchanges resulted in the passage of the futures act, which is designed to increase the safety of the future contract as an insurance and to limit somewhat the possibility of manipulation.

The enactment of this legislation is of importance to cotton growers because of the fact that in normal years the price when the farmer sells is usually based directly on the quotations of the future market. It is generally admitted that the undesirable features of future transactions are due to the number of different standards in use in the markets, to the fixed-difference system of establishing the value of other grades than middling, to the fact that very low qualities of cotton suitable for spinning use by only a few mills sometimes compose the larger part of the warehouse stock of an exchange and are deliverable on contract, to the fact that tenders of cotton under contracts do not indicate the qualities to be delivered, and to the fact that under the pro forma delivery practice several weeks sometimes elapse before the person who is obligated to receive cotton knows the grades tendered to him, for which he has contracted to pay at the time of delivery.

The act, by prescribing a form of contract, provides that future contracts must be based on uniform standards established by the Department of Agriculture; prohibits the pro forma deliveries and the tendering of cotton of less than seven-eighths inch in staple in settlement of future contracts; provides for the settlements for grades above or below the basis grade in accordance with prevailing commercial differences; allows an appeal to the Department of Agriculture in case of a dispute as to grades, staple, or quality of cotton tendered in settlement; lodges power with the department to ascertain commercial differences actually prevailing in the spot markets, and thus to safeguard the exchanges from unintentional error which might subject their contracts to taxation; makes it the duty of the department to determine which are bona fide spot markets, and to designate the ones which shall be used as

a basis for determining commercial differences; and imposes a prohibitive tax upon contracts for the future delivery of cotton on a basis price if they do not conform to the terms of the act.

The act as a whole is constructive and regulatory, not destructive or oppressive. It recognizes that the exchanges, when they are properly conducted, may benefit both the purchaser of raw cotton and the manufacturer of goods. The administration of this act has been intrusted immediately to the Office of Markets in collaboration with the Bureau of Plant Industry. A new standard set of grades, more truly representative of American cotton than any hitherto in use, has been prepared. The requisite surveys have been set on foot, tentative regulations have been prepared, and hearings held with a view to secure advice and suggestions for the revision of the regulations and the adoption of them in their ultimate form. No effort will be spared to lay the foundations for the enforcement of the act and to give the necessary information at the earliest possible moment, so that the exchanges of the country which desire to do so may operate in accordance with the terms of the new law even before it becomes effective.

RURAL CREDITS.

Closely related to the production and distribution of farm products is the securing of capital by farmers on better terms. This problem has attracted the profound attention of the country and still awaits a full solution. The difficulties arise partly from the diffusion and sparseness of the rural population, partly from the failure of proper business adjustment, and partly from the inadequacy of the security which part of the farming population normally can offer for loans. The problem is one of extending the banking machinery and facilities more intimately into the country districts for the convenience and the assistance of the rural population and of the effective mobilization and utilization of the resources of the country people themselves.

The chief difference of opinion arises over whether there should be special aid furnished by the Government. There seems to be no emergency which requires or justifies Government assistance to the farmers directly through the use of the Government's cash or the Government's credit. The American farmer is sturdy, independent, and self-reliant. He is not in the condition of serfdom or semiserfdom in which were some of the European peoples for whom government aid was extended in some form or other during the last century. He is not in the condition of many of the Irish farmers for whom encouragement and aid have been furnished through the land-purchase act. As a matter of fact, the American farmers are more prosperous than any other farming class in the world. As a class they are certainly as prosperous as any other great section of the people; as prosperous as the merchants, the teachers, the clerks, or the mechanics.

It is necessary only that the Government, so far as geographic and physical conditions permit, provide machinery for the benefit of the agricultural classes as satisfactory as that provided for any other class, and this the Government has attempted and is attempting to do.

It is the judgment of the best students of economic conditions here that there is needed to supplement existing agencies a proper land-mortgage banking system operating through private funds, just as other banking institutions operate, and this judgment is shared by the leaders of economic thought abroad. The national banking system up to the present time has labored under restrictions imposed by law which made it impossible for the national banks to solve the problems in the most effective way. State banks with fewer restrictions, with smaller capital requirements, and ability to lend on real estate have established more intimate touch and have perhaps rendered greater assistance. Likewise certain agencies, such as building and loan associations, insurance and mortgage debenture companies, and the cooperative credit associations recently created by State legislation in Texas, Massachusetts, New York, and Wisconsin, operate to extend capital to the farming districts, and thereby in a measure tend to cut down the rate of interest.

When the national banking law, commonly called the Federal Reserve Act, was under discussion in Congress, the matter of farm credits was considered and debated, but it was decided that the subject as a specific program should be separately dealt with in another act. The Federal Reserve Act was passed with a view to the improvement of the banking conditions of the country in the interest of all classes; to the restoration of normality in banking; to the establishment of a reserve or banking power which could be utilized in times of emergency; and therefore with a view to secure good banking at all times and to prevent panics. It is not a banker's law, or a business man's law, or a manufacturer's law, or a farmer's law; it is a law for all classes—for all the people. However, there were incorporated into the act several very important provisions which had in mind specifically the needs of the farming classes and the possibility of extending banking facilities to the rural districts.

It was specifically provided that a Federal reserve bank might "discount notes, drafts, and bills of exchange arising out of actual commercial transactions—that is, notes, drafts, and bills of exchange issued or drawn for agricultural, industrial, or commercial purposes, or the proceeds of which have been used or are to be used for such purposes." The Federal Reserve Board was given the right to define the character of paper thus eligible for discount. It was further distinctly provided that nothing in the act should be construed to "prohibit such notes, drafts, and bills of exchange secured by staple agri-

cultural products, or other goods, wares, or merchandise from being eligible for such discount." It was provided that the ordinary notes, drafts, or bills admitted to discount should have maturity at the time of discount of not more than 90 days, but that notes, drafts, and bills drawn or issued for agricultural purposes or based on live stock might have a maturity not exceeding six months. Not only is paper arising out of agricultural transactions made eligible under the act, but it is given a longer maturing period than other forms of paper. This apparent discrimination arose naturally out of the fact that agricultural operations are seasonal and involve a longer period than ordinary commercial transactions.

Again, it is provided in the act that national banking associations not situated in the central reserve cities may lend on improved and unencumbered farm lands within the Federal reserve district, and that such loans may be made for any period up to five years. Such loans may not exceed 50 per cent of the actual value of the property. Any national bank under this provision of the act may lend on farm lands an amount in the aggregate equal to 25 per cent of its capital and surplus or one-third of its time deposits. The Federal Reserve Act, therefore, so far from discriminating against the farming classes, distinctly bears them in mind, and while not discriminating in favor of them takes just and particular knowledge of their requirements.

The matter of additional legislation concerning farm credits was promptly brought to the attention of Congress by the President at the regular session in his annual message, and many experts have been giving persistent and careful attention to the problem.

The explanation of why special banking arrangements were devised abroad, but have not been extensively planned and operated in this country, is to be found in the difference in economic, social, and banking habits and conditions. This is the only large country that may be said to have the ordinary banking habit developed in a high degree, with banking and lending associations democratized and in touch with the masses of the people. The great masses of people in a number of European countries do not have the ordinary banking habit and know little about banking practices. The habit of depositing money in banks, of checking against such deposits, and of making loans through banks in such countries is not general. This may be illustrated by a reference to the Bank of France. This bank, with a billion dollars of bank notes, has only \$285,000,000 of deposits. A bank can utilize its assets either through notes or through discount and deposit and checking. In this country the assets of a bank are utilized to a slight extent through bank notes, the total volume being about \$725,000,000, while the total deposits in all the banks are \$17,000,000,000. This testifies to an unusual development of the banking habit among our people. Partly because of the lack of the ordi-

nary banking habit on the part of European peoples, partly because of the lack of banking facilities, and partly because of other social and economic factors, special agencies had to be devised. There was great need for some addition to their machinery. The land mortgage and the cooperative credit arrangements grew up of necessity. Likewise, the savings banks were created for similar reasons. It is noteworthy that only recently have savings institutions been established in great numbers in this country, and that still more recently the Government postal savings system has been evolved.

Notwithstanding the fact, however, that the people of the United States have ampler financial agencies than any other in the world, and have developed the habit of using these agencies to a greater extent than any other people, students of rural problems have been keenly alive to the need of further improvements. They have insisted upon extensions of the national banking facilities and the creation of special agencies in intimate touch with farmers with a special view to the betterment of financial conditions in the country. At least two definite measures have been prepared and have received special consideration. They are similar in many respects. They provide, in brief, for land-mortgage associations with small capital, which may make loans on farm mortgages within a district of a State or within a State to the extent of 50 per cent of the real values of the farms. The money arising from such loans is to be used for productive purposes on the farm on which the security is based. It is contemplated in one way or another, either through separate associations or through a central agency, that debenture bonds may be blanketed on the mortgages and offered to the public. It is proposed that the operations of the system shall be supervised by a central agency in Washington and that there shall be adequate safeguards in the way of examination and inspection. It is thought by students of the question that such debenture bonds would be safe, would attract capital, and would bring into the investment field, especially, small holdings scattered through the country which do not now easily find satisfactory investments. A plan of this kind, operating through private funds, should work safely and would probably result in a short time in systematizing credit transactions in rural districts and in reducing the rate of interest.

The Office of Markets and Rural Organization has continued its study of rural credits. Information bearing on farm-mortgage loans has been secured from two-thirds of the savings banks, trust companies, and State and private banks in the United States. The estimated total of farm mortgages held by these banks as loans exceeds \$930,000,000. This fund is very unevenly supplied. Iowa banks alone furnish nearly 100 millions. Illinois and New York approximate 85 millions each, California 67 millions, and Missouri

58 millions. In Indiana, Vermont, and Minnesota the sum in each exceeds 45 millions. The total of farm mortgages held by these banks in the 10 States of the cotton belt is approximately the same as that held by Iowa banks.

Bankers in many States, especially in the Middle West, furnish almost as much money for farm loans through their activity as middlemen as they do through loans from their own bank funds. In such cases the banker acts as an agent, usually for some insurance company, mortgage company, or other bank. It is estimated that approximately \$565,000,000 is thus handled through members of State, private, and savings banks and trust companies.

Information secured from insurance companies shows that more than \$600,000,000 of their funds are invested in farm-mortgage loans. While mainly confined at present to the corn belt, these investments are being extended into the South and West. The companies have trained field inspectors or rely upon the statements or guaranties of local agents as to land values. Insurance companies usually limit their loans to 40 per cent of the value of the security and to a fixed maximum per acre. The prevailing period of such loans is five years, with the privilege of prepayment on interest dates.

The business of existing mortgage companies in the United States is often that of agents or brokers who bring borrower and lender together and render other services connected with mortgage loans without assuming liability. Such business can be built up with very little capital. The mortgage is made out directly to the lender, who assumes all responsibility. It is evident that the market for such loans is restricted to investors who know the nature of the security, who are willing to lend the particular amount desired, and who will assume all risks.

A limited number of companies deal in mortgages as a jobbing or merchandise business. The mortgages generally are sold after suitable investors have been found. A few of these companies retain ownership in a portion of the mortgages, deposit them with a trust company, and issue debentures secured by the mortgages as well as by the capital of the company. The debentures are issued in even amounts of \$100 and upward and for varying periods, affording the investor some of the usual conveniences of bonds. However, inasmuch as the purchaser of a debenture does not know the particular mortgages used as security he must rely on the integrity and solvency of the company to protect his investment.

The students of rural credit recognize the desirability of another piece of legislation which may probably be had at the hands of the several States or of the Federal Government, namely, legislation authorizing and encouraging local personal cooperative credit associations. Some States have already taken steps in this direction and

others are contemplating taking them. The Department of Agriculture has made earnest investigations in this field and is in position to offer suggestions as to legislation and as to the form and operations of rural credit cooperative associations. Such associations as these will perhaps render their largest service in the sections of the country where there are many small farmers whose individual resources may not be sufficient to enable them to secure the requisite credit. Their largest field for operation would probably be the South. Characteristics of such associations of small farmers are: Unlimited liability of members, the pledging of the faith of each to the other and of the whole to the lender; the use of funds for clearly defined productive purposes; and the supervision by the association of the use made of the funds. It has been objected that the feature of unlimited liability will prevent the organization of such associations in this country, but in certain sections of the country the liability of small farmers is already unlimited, and this could not be said to be an insurmountable obstacle.

In reference to such proposed associations, as well as to land-mortgage banks, it is of the utmost importance that attention be centered on the use which may be made of borrowed money. It is of high importance that there should be guaranties of the use of funds secured for productive purposes on the farms covered by mortgages or other obligations; otherwise, the field for speculation will be opened and more harm than good may result. The investigations of the department indicate that a relatively small number of the banks of the country pay any attention whatever to the purposes for which loans are made, and in replies to inquiries many of the banks reporting did not even attempt to give data bearing on this important point.

The Office of Markets and Rural Organization has continued its investigation into the field of personal credits. From data gathered it appears that the State, private, and savings banks and trust companies supply approximately \$1,000,000,000 for short-time loans to farmers and that national banks furnish \$750,000,000. As may be expected, because of the differences in the relative importance of agriculture in various States, these short-time loans are very unevenly distributed. The funds are used chiefly in the financing of cattle raising, feeding, and marketing, of dairying, of hog and sheep raising, and of grain and cotton growing and marketing.

GOOD ROADS.

Good roads are equally intimately related to both the production and the distribution of farm products. They are prerequisite not only to economical production and distribution but also to the promo-

tion of the broader life of the communities. The great need, obviously, is for roads which shall get products from the farm to the nearest railway station, enabling the farmer to haul when he can not sow and reap, and to haul at a lower rate, to transport his children to consolidated schools, and to enjoy comfortably his social enterprises. The railway will continue for an indefinite time to be the nation's highway. Emphasis is needed on the community road. It is estimated that it costs 23 cents under existing conditions to haul a ton a mile on the average country road, and that this could be reduced by one-half if the roads were improved. The problem is partly, of course, one of funds, but even more largely one of methods, of instrumentalities, and of administration. The United States to-day is spending annually the equivalent of the huge sum of \$200,000,000 for roads, an enormous increase in the last decade. Much of this is directed by local supervisors, and it is estimated by experts that of the amount so directed from 30 to 40 per cent is, relatively speaking, wasted or misdirected. Less than half the States have expert State highway commissions, and very few of them have any sort of expert local machinery.

The problem, so far as the Federal Government is concerned, is how to inject its assistance into the situation primarily so as to secure efficient expenditure. The people of the nation are intensely interested in this problem, and pressure will continue for action by the Federal Government. The matter is of sufficient importance to justify again an attempt to indicate the wise course of action in case the Federal Government is further to expand its activities and lend direct support. If direct Federal aid is to be expended, it should be done only under such conditions as will guarantee a dollar's results for every dollar of expenditure, and, as has been stated, the emphasis should be placed on the community road, on the necessity of improvement in an economical manner of the dirt roads of the country, particularly through the cheaper forms of construction, such as sand-clay, gravel, and earth. Legislation should provide for cooperation between the Federal Government and the States, and that the State through an expert highway commission should be the lowest unit with which the Federal machinery should deal. If the Federal Government recognizes any other unit than the State highway commission, it will complicate the situation in those States where satisfactory developments have taken place and it will retard movements in the right direction in other communities. If, on the other hand, the law recognizes only a central highway commission it will strengthen the hands of those that now exist and secure the creation of such bodies in the 26 States that do not now have them. The mere creation of such bodies in every State would be a marked gain. The Federal department and the highway commission of each State

should be empowered jointly to select the roads upon which the work is to be performed and to determine the manner and methods of constructing roads under projects mutually agreed upon previously.

It seems desirable that if Federal money is to be expended, it should be limited to construction projects and should not be used for maintenance, and, furthermore, because of the time required for the development of the requisite machinery and because of the difficulty of assumption by either jurisdiction of a large initial burden, the Federal appropriation should at first be relatively small.

Expenditure for maintenance would involve the Government in a very unsafe and uncertain course. It would be a continuing appropriation on a vast scale. It would seem only proper that if roads are secured, the States and the communities should maintain them. I clearly recognize that it is difficult to draw the line between construction and maintenance on the simpler forms of road; but, after all, the line can be drawn and would be much clearer if proper methods of construction were pursued.

As an automatic check to a drain on the Federal Treasury in case Federal aid is extended, provision should be made that each State shall make available for construction at least as much as is set aside by the Federal Government, preferably twice as much, and that it shall give a satisfactory guaranty to maintain the roads constructed. On all projects on which Federal money may be expended in cooperation with the States it should be provided that the two authorities shall fully cooperate, and that before Federal money is made available for any projects such projects shall have been mutually agreed upon by the Federal department and the State authorities, with clear understandings as to methods of construction, specifications, materials, and the development of a road system.

It will be objected by some that this suggestion involves an invasion of State rights. As a matter of fact, it simply looks to the use of Federal money for the purpose for which it may be voted, and to its efficient expenditure. Those who fear invasion of State rights can easily obviate the danger by declining to ask for Federal money. If they demand Federal money, they can not easily decline to have its proper and efficient expenditure safeguarded. It is no argument to assert that State agencies may be trusted. As a matter of fact, they are not the officials who have to assume the responsibility for the expenditure of Federal money. We do trust State authorities fully to vote and expend State funds. They assert the right to look after the expenditure of State funds and do so with great jealousy. They should show a willingness to have the Federal officers assist in the supervision of the expenditure of Federal moneys.

One thought should be clearly held in mind, namely, that it is highly unwise to discourage State and local effort. Only in recent

years have the States begun seriously to attack many of the problems which it was originally contemplated they should solve. If the Federal Government were to make a very large appropriation, it is not improbable that the States would begin to look to it somewhat exclusively for funds with which to build roads. Such a development would be calamitous.

DISSEMINATING INFORMATION.

The nation is spending through the department large sums in acquiring agricultural information. It would be little short of criminal to spend millions of dollars to acquire information and not to use every possible efficient agency available for placing it at the disposal of the people as promptly as possible, for it is certain that if the average farmer could be induced to apply what the experts now know or what the best farmers practice, a revolution could be brought about in the agriculture of the nation. It has seemed a matter of great urgency that through every proper channel at the earliest possible moment there be brought home to the 6,000,000 farm families of the Union the knowledge which the department has acquired and is increasingly acquiring. It is the purpose of the department, with as little delay as possible, through every proper medium to give the knowledge which the department possesses as the result of investigations and field work to all the people who desire it or should have it.

Up to a comparatively short time ago the printed matter conveying information was in the form of bulletins and circulars limited to issues of from 2,000 to 40,000 copies. Not infrequently much time was required for the final preparation of the bulletin, for its printing, and for its distribution. In the nature of things, the bulletins could not reach a great mass of the farmers. Many farmers did not even know of the existence of the department and knew nothing of the service it could render. They did not know of the existence of bulletins which would be helpful to them or how to secure them; and in many cases they could secure them only with considerable inconvenience and some expense. Furthermore, the bulletins were not infrequently difficult to interpret, to understand, and to apply. Emergencies frequently arise in which information, to be of value, must be placed within a few hours in the hands of farmers. The delay in issuing official printed bulletins and mailing them often defeated the possibility of service. In case of distant States the mailing time to and from Washington caused from 12 to 14 days to elapse before the desired information could be delivered. In many cases, where the department's supply of printed publications was exhausted, it has been necessary to inform the farmer that he must send 5 or 10 cents to the Superintendent of Documents to obtain the desired publica-

tions. This involves on the farmer's part the writing of a second letter to the Superintendent of Documents and another delay of 12 or 14 days. In cases actually worked out, where the publication desired was not available from the department, farmers in Pacific Coast States have been unable to obtain the information in less than 30 days.

As the result of long observation, as well as of careful survey, the department reached the conclusion that, aside from the conveying of information by competent persons directly to farmers on their farms, the most efficient medium for reaching the farmers was the agricultural press, and that, next to this, the most efficient mediums were the daily and weekly newspapers which devoted space to agricultural matters. It was ascertained that these journals would gladly use material if it were furnished to them in such form as to be readily available. It seemed desirable to have an office which could do this, because through it the matter could be more accurately and adequately presented. It was also discovered that correspondents of representative journals would telegraph to their home offices items giving important and timely agricultural information bearing upon pressing problems.

This whole matter was made the subject of a conference with the chiefs of bureaus, other officers of the department, and experienced writers and journalists. As a result of this conference the Office of Information was established.

Not only has the establishment of this Office of Information resulted in a fuller knowledge on the part of the farmers of the fact that they can get assistance and that bulletins are available, but it has led to a much larger call for bulletins and supplied a vast amount of information to the press.

During the fiscal years 1913 and 1914 the staff of the office prepared and issued in mimeographed form to the agricultural press and newspapers 512 summaries or condensed statements of fact and 30 special items to the press associations covering quarantine notices and supplementary statements regarding crop estimates. In addition, each week from 10 to 20 pages of typewritten material have been prepared specially and supplied to rural weekly papers. In every case the summary was circulated only to editors in the geographic or agricultural territory to which the information was directly applicable. The office also cooperates with many editors or their representatives, and others who write, or telephone, or call in person for special information needed by them in the preparation of agricultural articles. It answers daily many letters requesting information not covered directly by existing publications or not falling within the province of any one of the department's bureaus or offices.

While no effort has been made to keep a complete account of the use of material by publications, a computation of the circulation shows that the information issued through the office is appear-

ing monthly in over 250,000,000 printed pages. This computation does not include the total circulation of this information. It does not include the department's material which appears in the pages of nearly every agricultural journal and much special material on practical farming carried by weekly country papers. As a result of this service many daily papers which heretofore had given no attention to agriculture are now devoting considerable space to publishing the department's brief, simple statements of direct local value as to improved methods of farming or as to control of crop pests. These reach the farmers promptly through the Rural Free Delivery Service. This service is not now being used and never has been used for private interests, either directly or indirectly. It limits itself to the dissemination of established facts and of officially approved information. It has refrained from discussing individuals, from entering into controversies, and from commenting on legislation. It has the simple aim of attempting to convey to the farmers, through the press, as effectively and quickly as possible, the latest discoveries in agricultural science and the best practices.

COOPERATIVE EXTENSION ACT.

But bulletins, circulars, and press notices conveying information for farmers, no matter how excellent they may be and how numerous, will not solve the problem of reaching the farmer and of inducing him to adopt the best methods. Personal contact in this field of education, as in others, is essential. The method of demonstration by competent individuals to farmers on their farms has been tested by the department over many years. It has been justified by its results and has been formally sanctioned by Congress in the recent Agricultural Extension Act. This measure is of vast significance. It is one of the most striking educational measures ever adopted by any Government. It recognizes a new class of students—a class composed of men and women working at their daily tasks on the farm. The Federal and State Governments take the adult farmer and farm woman, as well as the farm boy and the farm girl, as their pupils. The measure provides for cooperation between the States and the Federal Government. It guarantees a coordination of the forces of the two jurisdictions. It places the brains of the two great agencies in conjunction, eliminates waste and friction, and insures efficiency. Providing for an initial appropriation of \$10,000 to each State, to be expended through the land-grant colleges in cooperation with the Federal Department of Agriculture, it stipulates that the amount shall increase by approximately a half million dollars from the Federal Treasury each year until 1921-22, and that each State accepting the act shall appropriate an amount equal to the increase above \$10,000. The result will be that for the fiscal year 1922-23 and thereafter there will be expended, without

any further legislation, from the Federal Treasury \$4,580,000, and from the State treasuries \$4,100,000, or a total of \$8,680,000. This sum must be expended in direct instruction in the field, as the act is very specific in prohibiting its use for teaching or erecting buildings at institutions and in limiting the proportion that can be expended in printing bulletins. If we add to this fund the direct appropriations to the department for educational extension work and the excess appropriations of the several States, it probably will be found that the nation will be expending in 1922-23 and thereafter, without any further legislation, a sum in excess of \$10,000,000 or \$11,000,000.

Every State in the Union through its proper authority has accepted the provisions of the act. Most of the colleges have already submitted their projects for the current year and are laying the foundations of machinery which will be adequate to the handling of this great task. This piece of legislation will do more than provide effective machinery for efficiently reaching the farmer. It will greatly improve the relations between the institutions of the several States and the Federal department. It will promote harmony between them and will lead to wiser planning of work.

Believing that the provision for the coordination of work under the extension act was wise, and realizing that it was desirable to have only one piece of machinery in each State undertake this sort of task, the department suggested to the several State establishments the advantage of coordinating with the work under the extension act the extension work for which the department is directly responsible through its special appropriations. This suggestion was received with favor by the State institutions, and in every State except two or three this further coordination has been brought about, and thus the two great agencies are working in each State in full accord and harmony for the interest of the whole people.

FORESTRY PROBLEMS.

While the chief task of the department in forestry is the administration of the National Forests, its work has a larger aspect. Most of the country's timber is in private hands. Here the situation is far from satisfactory. Very little private timber is handled with a view to the production of a new crop. Lumbering now involves much waste, partly because of the limited market for the lower grades. In spite of the growing sentiment against forest fires, and the spread of organized fire protection, there is still a heavy fire loss. Altogether, our timber resources are undergoing both depletion and dissipation, notwithstanding the generally recognized need for conserving what we have and for producing a new crop. It is as much the duty of the department to seek means of success in the growing of this crop as of any other.

That forestry can be practiced in this country with good results the experience of the department in managing the National Forests makes clear. The main difficulty in the way of private forestry can no longer be held to be the lack of adequate knowledge or of successful example. Unquestionably the existing situation is brought about by various causes, some of which are due to unchangeable economic conditions, while others are probably removable. There is great need for a careful inquiry to ascertain just what and how important these various causes are. Such an inquiry has been inaugurated jointly by the Department of Agriculture and the Department of Commerce. Its purpose is to obtain the basis for a constructive public policy with regard to the timber question in all its phases—present conditions of production and marketing, the effects of timber speculation and the danger of private monopoly control, waste, the effects of competition, the various elements which enter into the cost of lumber to the consumer, and the question of future supplies.

An important part of the forest problem is to get the right line drawn between farm and forest. Under private ownership, considerations enter which do not always lead to the best use of the land. On the National Forests the question is determined by a careful study of what the land is best fitted to produce and what the public most needs. Agricultural development is provided for either by excluding from the forests land chiefly valuable for other than forest purposes or by listing land for settlement under the Forest Homestead Act. The work is carried out through land classification, which was aggressively pushed last year. The elimination made or determined upon totaled over 2,000,000 acres, while systematic classification was conducted on 100 of the forests and over 280,000 acres of land were listed for settlement under the Forest Homestead Law. The area in the forests at the close of the year, exclusive of land not the property of the Government, was slightly over 165,000,000 acres.

There is need for similar classification work outside of the National Forests wherever the public domain is timbered. There are still many areas which should be added to the forests. Wherever the land will have largest permanent value through use for forest production, it should be held in public ownership. Timbered portions of the public domain are now unprotected against fire and trespass and are often a source of danger to adjacent lands. Under existing law, the President has, in the seven States of California, Oregon, Washington, Idaho, Montana, Colorado, and Wyoming, no authority to add such lands to the present National Forests. Legislative provision should be made for applying the classification principles in these States.

There is also need for legislation to permit the consolidation of National Forest holdings through land exchanges with States and private owners. Some of the forests contain a great deal of land

which was acquired from the Government before the forests were established. Exchanges of land on the basis of equal values would be very advantageous to the Government, since the cost of administration and protection would be materially reduced.

The National Forests, of an immense property value, must first of all be safeguarded against destroying agencies. Their most serious menace is fire, though heavy losses may also result from the ravages of insect pests and tree diseases. The control of all these grows yearly more efficient. A most dangerous fire season has just been concluded with remarkable results. A drought of unusual severity and duration created tinderlike conditions throughout most of the Northwest. To this was added at times the peril of high winds, which greatly increased the difficulty of fire control. That the season was terminated without an appalling destruction of both public and private property in and about the National Forests is due to the preparedness of the Forest Service organization, the yearly expanding equipment of the forests with means of communication and movement of both men and supplies, and the aggressiveness with which the fires were fought before they had time to develop.

It is beyond question that the cost of discovering and fighting these fires was repaid many times over. A billion dollars' worth of Government timber—to say nothing of other resources, of private property, and of human life—was brought through the season with a comparatively trifling loss. To achieve this result it was necessary for the department to create a large deficiency, since the appropriation for emergency fire fighting was wholly inadequate. In consequence a deficiency appropriation must be asked from Congress.

A larger emergency fund is needed. In the summer of 1910 unprecedented fires resulted in a deficiency which Congress met by an appropriation of \$900,000. To prevent such a contingency from arising the following year an emergency fund of \$1,000,000 was made available, to be drawn upon only in case of unusual need. This fund has been cut down in the successive appropriation acts since, until in the current year it has become only \$100,000. Experience has made it plain that only in very favorable years is this amount adequate.

The administrative task which the National Forests present goes far beyond their protection. Use of their resources must be provided for under plans which aim at their systematic development.

Timber, forage, and water are the resources of primary importance. Their full development is possible only through accurate knowledge of the factors which control their yield and painstaking study of the methods which will secure the most complete use. Investigative work is the key which unlocks these resources for the public. Use of the

National Forests is being developed along lines which are at once thoroughly scientific and thoroughly practical.

In its handling of timber sales on the National Forests the department is confronted with a situation radically different from that which obtains with respect to the grazing. While almost all the range on the forests is in demand, most of the timber is not. To a large extent, development work here means so handling the timber that it will be an important factor in opening up the country. Whenever and whenever general business and market conditions make it possible to sell large bodies of now inaccessible timber, the aim is to offer the timber on terms which will tend to increase transportation facilities, promote settlement, and build up permanent communities. Where timber can be sold, the benefits of Government management of the forests as public resources are apparent now. Where, however, the timber is not in present demand, a difficult situation sometimes exists.

It has been urged that, with the vast supplies of virgin National Forest timber, the Government should greatly increase its sales by lowering the price asked for stumpage. To the extent that such a course had any effect at all, it would be in the long run an effect unfavorable to the public interest. Upon the greater part of the timber it would have no effect, because no manufacturer could, under present conditions, afford to cut the timber at any price. Where timber is thus not in demand because still inaccessible, as a rule the possibility of marketing it depends on the advent of a period of greater activity in the general lumber trade. When, as at the present time, lumbermen are forced by general market conditions to curtail output, the department can not expect to make many large sales. Nevertheless, it is wise even in such times not to cease offering large bodies of timber on terms which may attract purchasers, and this is being done. At the same time all possible effort is given to develop small sales for the supply of local needs, and sales to industries which require wood for special purposes, since sales of this character provide a fairly steady market for National Forest stumpage, even when the general market is depressed. In a word, the timber-sale policy, no less than the grazing-regulation policy, aims to make the resource serviceable to the public now, as well as in the future, in the fullest degree which scientific production and utilization can make possible.

FURTHER SPECIAL COMMUNITY AID.

In regions where timber is the chief income-producing resource, absence of demand for it often works a serious hardship upon those who have entered the region as the advance guard of civilization and are seeking, in the face of many difficulties, to establish homes.

There are counties in which a sparse local population of pioneer settlers find themselves surrounded by a wilderness largely consisting of National Forest land, which is almost idle so far as any form of present use is concerned. In other words, a great, if not the greatest, potential source of wealth in such counties, held in trust by the Government for the benefit of the public, not merely contributes nothing now to the upbuilding of the communities which will give value to the forests, but actually adds to the burden which these communities must assume. Were the forests private property they would pay their fair proportion of the cost of road development, public schools, and other public activities, through taxation. The Government, unlike the private owner of timberland in such regions, is holding the timber, not in order to make a profit later by its advance in value, but in order to make it promote the public welfare. That it should be made to serve the local as well as the national public welfare has been definitely recognized in the provisions of law for the use of 35 per cent of all gross receipts from the forests for local public purposes.

To carry more fully into effect this already established principle a further step should be taken. It should not be necessary to wait until the period of hardest struggle is past before these public resources begin to assist local development. Before the National Forests begin to yield large incomes, as well as after, they should be made to participate in the work of building up the country and giving value to all its resources.

The first need of the public in undeveloped regions is for more and better roads. Without them the struggle of individuals to gain a foothold is much more difficult, while isolation from neighbors and the outside world means meager educational opportunity, a lack of comforts, and conditions unfavorable to community life. A road system, however, constitutes a capital investment which a handful of settlers must make a little at a time. When their roads must be built largely through National Forest lands, which pay no taxes, their case is much more difficult. In such regions the Secretary of Agriculture should be authorized to make a study of the local conditions and to gather all the data necessary to formulate a plan for public-road development based on local needs. These plans should be carried into sufficient detail to provide a reasonably accurate estimate of the cost of the road construction which it is proposed that the Government shall undertake. They should be accompanied by careful and conservative appraisals of the value of the National Forest timber in each locality and a forecast of the future income which the forests will bring in from all sources. On the basis of the showings of fact regarding the value of the Government's property, its potential income-yielding capacity, and the needs of the public, Congress should be asked to appropriate for the construction of specific projects

recommended by the Secretary of Agriculture. The cost of such road construction by the Government should constitute an advance of the amounts which the forests would later make available for local use. In effect, therefore, the roads would become an obligation upon the forests, to be extinguished as their resources come into commercial demand.

Water is a National Forest resource of even greater importance than timber or range, for the forests feed every important western stream. Water supplies and the value of water use depend to a large extent on the methods employed in handling the timber and forage resources, for both the volume and the purity of the water yield may be disastrously impaired by bad forestry or grazing methods. Of all forms of water use, that which supplies municipal needs should be given most careful consideration. Some 1,200 western towns derive their water from National Forest watersheds. The authority of the Secretary of Agriculture to protect such water from contamination is inadequate to safeguard the public health, and should be enlarged by further legislation.

Recreational use of the forests is by far the chief of what may be called their secondary uses, and is certain to grow rapidly in importance. While water, wood, and forage production must be given first place, constructive study of the problems which the value of the forests for recreational use present is also an urgent need. Among these problems is provision for the use of land by persons wishing to build summer homes within the forests, and by hotel enterprises. At present the only course open to the department is to grant applicants for such privileges a revocable permit to occupy the necessary land. Provision for term leases is highly desirable, and legislation to this end is urged.

REORGANIZATION.

The Congress at its last session authorized and directed the Secretary of Agriculture "to prepare a plan for reorganizing, redirecting, and systematizing the work of the Department of Agriculture as the interests of economical and efficient administration may require." It ordered that such plan be submitted to Congress in the Book of Estimates for the fiscal year 1916, and that the estimates of expenditures of the department for the fiscal year 1916 shall be prepared and submitted in accordance therewith. In compliance with this authorization and direction, a careful survey has been made of the organization and work of the entire department. It was evident from the outset that in the rapid growth of the department some lines of work had been located illogically in different bureaus out of immediate touch with closer related lines and, in some instances, without any reference to the adequacy of the machinery of the bureau to handle them. Furthermore, it was apparent that the three

leading lines of department work—the regulatory, the research, and the educational—had become in a measure intermingled in the various bureaus, so that no satisfactorily clear view could be had of them in their entirety either in any bureau or in the department as a whole. It was obvious that some work was done at cross-purposes and that a certain amount of conflict of interest, lost motion, and inefficiency resulted. It is clearly desirable, as far as possible, to differentiate and segregate each kind of work from the other, to see to it that the policing or regulatory functions do not interfere with the research work, or either of these with the educational or extension work, but that, on the other hand, they are so organized and related that each would reenforce and foster the other. A committee consisting of officers drawn from various bureaus made a careful study of the situation and submitted its report, which, after revision, was approved by the Secretary and will be reported to the Congress for its sanction. The estimates of the department have been submitted in accordance with the plan, as directed by the Congress.

The first important feature of the proposed change is the definite outline or segregation in each bureau of these three groups of activities—the regulatory, the research, and the extension. The conclusion was reached that it was not only not necessary to interfere with the bureau and office organizations existing, but that it would be distinctly unwise to do so. The suggestion of grouping the services of the department as a whole, according to the purposes in view, into regulatory, research, extension, and other groups, each with a large number of similar small units, was carefully considered and was abandoned as unnecessary and undesirable. It was decided that better results would be secured by retaining the existing organizations, with certain modifications and rearrangements.

This segregation, however, which is highly important, is a matter of internal concern and in the interests of administrative efficiency, and requires no legislative action. The work will be shaped in conformity to the segregation, and the administrative officers will have a clearer view of the several activities under their direction. Pains will be taken to assign those who have research talent to the investigational work, those who have administrative ability to the regulatory, and those who have special talent for the direction of extension work to that entirely. The changes in these directions can not fail to be conducive to efficiency.

The second and equally important suggested change is the relocation of important lines of work, as follows:

It is proposed to remove from the Bureau of Plant Industry the Office of Farm Management and the farm-demonstration work for both the North and the South, and to attach the former to the Office of the Secretary and the latter to the Office of Experiment

Stations, the name of which it is proposed to change to the States Relations Service. Farm Management conceives the farm as a whole. Its problem is not primarily a Plant Industry problem. It is rather a business or economic problem. It is not one for which the agronomist has necessarily the requisite training, although the service of the agronomist as well as the services of experts of other bureaus are invoked. Since its function is that of studying the farm from the business point of view in all its aspects, it seemed advisable to relate the office to that of the Secretary, so that the officers might feel conscious of no bureau limitations. Similar considerations led to the conclusion that the farm-demonstration work should not be attached to a particular bureau. Heretofore, the agents in this work, attached as they have been to the Bureau of Plant Industry, have experienced some embarrassment in demonstrating things coming within the work of other bureaus. Obviously the farm demonstrator must be prepared to demonstrate anything the department has of value to the farmer. He can not conceive of the farm partially. The change in the name of the Office of Experiment Stations to States Relations Service is proposed because the term "Office of Experiment Stations" is no longer indicative of that part of the department's activities. That office has in addition to the supervision of the experiment-station funds the supervision of other funds expended by the land-grant colleges, and has logically been charged with the administration of the new extension act. The direct farm-demonstration work is similar to the work which will be carried on under the extension act, and, as has been stated, arrangements have been made for coordinating it with the work under the extension act.

It is proposed to change the name of the Office of Public Roads to the Office of Public Roads and Rural Engineering, to eliminate from the Office of Experiment Stations the work in irrigation and drainage, and from the Bureau of Plant Industry the work in rural architecture, and to locate these three lines of work in the newly named office. There seems not to have been any logical reason for locating the work in irrigation and drainage in the Office of Experiment Stations, and that office in its higher administrative branches is not organized with a view to the direction of engineering work. The Office of Public Roads is primarily an engineering office, and irrigation and drainage, as well as architecture, naturally belong to it. To the new Office of Markets and Rural Organization it is proposed to transfer from the Bureau of Plant Industry the work in farm-credit and farm-insurance investigation; from the Bureau of Animal Industry the market-milk investigations, and, in part, in cooperation with the Bureau of Animal Industry and Bureau of Chemistry, the poultry and egg investigations.

It is proposed to transfer from the Bureau of Soils to the Bureau of Plant Industry the soil-fertility investigations. The committee of experts reporting on this matter were unanimous that the work in soil-fertility investigations and that in soil bacteriology and in plant pathology in the Bureau of Plant Industry should be located in the same bureau. They are closely related, and work in one could not in all cases be carried to a satisfactory conclusion without a close and intimate coordination with the others. After a most careful consideration it seemed wise and practicable to propose that the transfer be made to the Bureau of Plant Industry. Other less important changes include the transfer of poisonous-plant investigations from the Bureau of Plant Industry to the Bureau of Animal Industry, investigations of duck diseases from the Biological Survey to the Bureau of Animal Industry, and of wood-distillation work from the Bureau of Chemistry to the Forest Service.

There is good reason for believing that the redirection and relocation of the work as proposed will result in a marked increase in the efficiency of the labors of the department.

CONCLUSION.

I have sought to bring into view in the main some of the larger constructive tasks and proposals of this department. I have not undertaken to review the work and services of certain great offices of the department, such as the Weather Bureau, which is giving highly valuable aid not only to the farmer, to the business man, and to the navigator, but to all the people of the nation; the Office of Experiment Stations, which has such broad and intimate relations with the whole land-grant educational machinery of the nation; the Bureau of Chemistry, which is charged with the administration of the Food and Drugs Act; the Bureau of Biological Survey, which is intrusted with many difficult tasks, including the administration of the Migratory-Bird Law; the Bureau of Soils; the special boards, such as the Federal Horticultural Board and the Insecticide and Fungicide Board; and the Office of the Solicitor, whose activities are essential to the orderly handling of many important departmental, legislative, and administrative affairs. I have not attempted to outline the activities of divisions of these or of other offices and bureaus. I should deeply regret it if my failure to do so were interpreted to indicate that their work is in any measure less valuable and helpful than that which has received more specific and elaborate mention. Where activities are so varied, the task must of necessity be one of selection and emphasis. For a full comprehension of the undertakings, activities, and services of the department the reports of the several bureaus and offices separately published must be consulted.

Through such legislation, enterprises, and labors the Federal Government is attempting to solve the problems of agriculture and of rural life. It finds valuable allies and coworkers in the great agricultural agencies of the several States. Nothing short of a comprehensive attempt to make rural life profitable, healthful, comfortable, and attractive will solve the problems. It is the only sure way of retaining in the rural districts an adequate number of efficient and contented people. That the thought and effort of the nation must be persistently and systematically along these lines is clear. The urgency of the task is emphasized by the fact that while the population of the United States in the last 15 years has increased 23,000,000, the strictly rural districts have shown an increase of perhaps less than 6,000,000. While we labor to increase the supply of material things we can not neglect the higher things—the intellectual and social sides of rural life. The conservation and development of the people is the greatest problem of conservation confronting us. We must see to it that some of the finer results of civilization accrue to the people of the rural districts and are not the peculiar possession of urban communities. An expenditure of effort and money in this direction can not be a burden. Through such measures wisely executed and with such protection rural life will become more efficient, and the farmers of the nation may without fear face the competition of the world.

Respectfully,

D. F. HOUSTON,
Secretary of Agriculture.

The PRESIDENT.

REPORT OF THE SECRETARY OF COMMERCE.

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, November 10, 1914.

To the PRESIDENT:

I have the honor to submit herewith my second annual report, covering the operations and condition of the Department during the fiscal year ended June 30, 1914, and tracing in a general way its history through the month of October, 1914.

The organization of the Department was not changed during the fiscal year. The nine bureaus composing it during this period were those of Foreign and Domestic Commerce, Corporations, Standards, Census, Fisheries, Lighthouses, Coast and Geodetic Survey, Steamboat-Inspection Service, and Navigation. To these should be added the Office of the Secretary, consisting of five divisions, namely, Office of the Chief Clerk (including the Division of Supplies), Disbursing Office, Appointment Division, Division of Publications, and the Office of the Solicitor. By the act creating the Federal Trade Commission the Bureau of Corporations will be detached from the Department when that commission is organized and will form its administrative nucleus.

The hope expressed in my last report that the Bureau of the Census might be united with the rest of the Department by an addition to the Commerce Building has been carried into effect. Early in 1914 the Department made an informal agreement with the Commerce Building Co. for the construction of an 11-story and basement, steel-frame, fireproof addition to the present Commerce Building, at Nineteenth Street and Pennsylvania Avenue NW., in order to house the Bureau of the Census. The arrangement provided that the Department would, if the matter were approved by Congress, lease the addition at a rental of 40 cents per square foot, and that the building would be ready for occu-

pancy on or before September 1, 1914. Congress in the legislative, executive, and judicial act approved July 16, 1914, appropriated \$17,500 for the rent of the addition, which is at a rate not exceeding 35 cents per square foot, but authorized the leasing of the addition for a period of five years. The regular amount paid during the past nine years for rental for the Bureau of the Census has been \$21,000 per annum.

The construction of the addition began February 27, 1914, and the building was ready for occupancy on July 1, 1914. The Commerce Building Co. advised the Department on May 22 that the building would be ready for use on July 1, and the work of moving the Bureau of the Census began June 1. The large electric truck of the Bureau of Standards and that of the Bureau of the Census, with three wagons owned by the Department, were used to do most of the moving; some of the heavier hauling was performed by two local transfer companies. The appropriation of \$1,500 granted by Congress for moving the Bureau of the Census was not required and will be returned intact to the Treasury at the close of the present fiscal year.

By moving the Bureau of the Census into the enlarged Commerce Building, the Department was enabled to reduce its expenditures for the fiscal year ending June 30, 1915, by \$24,280. The change has also reduced the risk of the destruction by fire of valuable records of the Bureau, as the addition contains a fireproof vault in which these records are kept.

The Bureau of the Census is now housed with most of the other bureaus of the Department, and its officers and employees have expressed satisfaction with the improvement in their working conditions, particularly in the respects of light and ventilation. By the above-described change the Government is paying much less for greatly improved service. As a business proposition the scattering of a department through several buildings located in different parts of the city can never be justified. It is a cause of hourly waste, a producer of delays, and a creator of inefficiency. Only compelling reasons can warrant operating an organization which should be one whole through separate and distantly related parts.

There is a daily loss both of money and of effectiveness in the separation of the Bureau of Fisheries, the Bureau of Standards, and the Coast and Geodetic Survey from the rest of the Department. The work of the Bureau of Standards is such, however, as

to require that it be placed at a distance from the built-up portions of the city. No such condition affects the Coast and Geodetic Survey and the Bureau of Fisheries, one of which is near the Capitol and the other on the Mall, both so placed as to insure the maximum expense in operation and maintenance with the least efficiency in results. Furthermore, the buildings owned by the Government in which the Coast and Geodetic Survey and the Bureau of Fisheries are located are ill-adapted for their purposes. It would be hard to find two buildings worse suited for the uses to which they are put than these. Important work of the Coast and Geodetic Survey is conducted in what was an old stable, and the invaluable plates and records of the Survey are in constant danger from fire. Two small fires have already occurred and would have resulted in the destruction of the building if they had not been early discovered by accident. The building occupied by the Bureau of Fisheries was built as an armory for the militia of the District of Columbia in 1856. In 1878 it was a storehouse. In 1882 it was used for a fish hatchery. It has long been out of date. No private concern with an eye to economical management would permit the use of these buildings for their respective purposes longer than necessary for obtaining the funds to replace them.

I recommend that the proposed new Government building for the Department of Commerce be so planned that it shall contain the Coast and Geodetic Survey and the administrative portion of the Bureau of Fisheries.

The Bureau of Fisheries should be provided with a modern aquarium, suited alike for the education of the public and the carrying on of the scientific work of the Bureau. This should be housed in a separate building, located as near as practicable to the proposed new building for the Department.

Land has already been purchased by the Government for a building for the Department of Commerce and it would, in my judgment, be easy to revise the plans for the space intended at the time the plans were made for the bureaus since diverted into the Department of Labor, so that the building may receive, as above stated, the Fisheries and the Coast and Geodetic Survey, allowance at the same time being made for the removal of the Bureau of Corporations, which has been merged into the Federal Trade Commission. In this connection I renew my protest against the policy of paying rent to private parties for

buildings for the public service, especially when this requires the work of a great department to be split into separate parts at a greatly enhanced cost for operation. It is not good business sense to pay through rentals to private parties twice as high a rate of return on their investments as that which the Government would pay for money invested in buildings of its own.

The Department of Commerce occupies the Commerce Building under a lease with nearly four years to run. It would take substantially that time to complete the new structure and it would, in my judgment, be wise policy to proceed promptly with the latter. The site now occupied by the Coast and Geodetic Survey, of which a portion is occupied by the United States Public Health Service, is a valuable corner adjoining the Capitol, admirably suited for a building to be used in connection with the legislative branch but unfit for part of an executive department most of which is at the far end of the city. The union of all the bureaus of the Department into one efficient working whole is an end of primary importance to be sought so far as it is practicable to bring it about. It should be remembered that the Department has had experience in operating in separate scattered units and again in operating with six of its nine units gathered into one building. The knowledge thus gained points to the wisdom of grouping the whole Department together as nearly as possible under one roof at the earliest practicable time.

The act approved October 22, 1913, authorized the Secretary of Commerce to enter into a contract for the rental of a water-cooling plant in the Commerce Building, and such an apparatus has been installed. It consists of a refrigerating plant and pump located in the basement, with 51 fountains located throughout the building. This system gives general satisfaction and has enabled the Department to dispense with 75 water coolers.

In March, 1914, the Department purchased a light gasoline truck to carry mail between the post office, the Commerce Building, the Bureau of Fisheries, the Coast and Geodetic Survey, and the Bureau of the Census as then located, and to make miscellaneous trips to various departments, bureaus, and places of business. This work had till then required three horses and wagons and an electric truck, each with at least one employee and in some cases with two. Since the Bureau of the Census came to the Commerce Building the use of the electric truck of that Bureau has enabled the Department to dispense in all with four horses and wagons.

The gasoline truck has now been in operation six months. Its use has resulted in a direct saving in money and in quicker and better service.

This Department has turned over to the Department of Labor the following articles since November 5, 1913:

Article.	Number.	Value.	Article.	Number.	Value.
Key case.....	1	\$10.00	Halter and chain.....	1	\$1.90
Cuspidors.....	6	2.88	Scale, Buffalo drop-lever plat-		
Doors, swinging.....	20	272.80	form.....	1	37.75
Racks, towel.....	2	1.25	Ladders, trolley, suspension,		
Skid, truck.....	1	2.98	complete with track.....	2	32.00
Horse cover, storm.....	1	4.25	Ladders, trolley side, com-		
Horse blanket, night.....	1	5.00	plete with track.....	2	43.00
Surcingle.....	1	1.50	Brackets, fan.....	36	72.00
Storm apron for wagon.....	1	3.50	Shades, holophane, assorted,		
Nose bag.....	1	1.00	25 to 100 watts.....	247	186.26
Horse, bay.....	1	235.00	Fixtures, ceiling.....	20	382.00
Wagons, mail.....	2	375.00	Hoe, fire.....	1	1.60
Harness, single wagon, brass			Shovel, scoop.....	1	1.10
mounted.....	a 1	47.00	Extinguishers, fire.....	4	46.40
Blanket, street.....	1	4.00	Carpet.....	b 88½	147.96
Blanket, stable.....	1	6.40	Linoleum.....	b 860	1,087.90
Weight, hitching.....	1	.50			
			Total.....		3,012.93

a Set.

b Yards.

As furniture, equipment, etc., valued at \$9,489.84, were similarly transferred to the Office of the Secretary of Labor during the preceding fiscal year, the value of all such equipment transferred amounts to \$12,502.77.

The sundry civil act approved June 23, 1913, contained an appropriation of \$500,000 for the participation of the Government of the United States in the Panama-Pacific International Exposition at San Francisco, Cal., February 20 to December 4, 1915. The Government exhibit board, which is in charge of the Government exhibits, allotted \$54,625 for those of this Department. This sum was suballotted by the Department as follows:

Bureau of the Census.....	\$5,700
Bureau of Foreign and Domestic Commerce.....	950
Bureau of Standards.....	11,400
Bureau of Fisheries.....	25,650
Bureau of Lighthouses.....	4,750
Coast and Geodetic Survey.....	3,800
Bureau of Navigation.....	950
In reserve.....	1,425

The exhibits of the various bureaus are in preparation, and moving pictures have been taken of several features of the Department's work. This Department will make an attractive showing.

The cost of maintaining the Department of Commerce for the fiscal year ending June 30, 1914, including \$410,700.77 for printing and binding, was \$11,424,335.84. On June 30, 1914, there were turned into the surplus fund in the Treasury unused balances of appropriations amounting to \$347,162.48.

The force employed by the Department fluctuates greatly. At the close of the fiscal year there were employed, including all temporary and per diem services, 9,936 persons. This does not, however, represent the total number of persons who at one or another time were employed during the year. The total number of such employments throughout the fiscal year was 18,687.

The Department used the following vessels:

Coast and Geodetic Survey.....	12
Bureau of Navigation.....	1
Bureau of Lighthouses:	
Tenders.....	45
Light vessels.....	66
Bureau of Fisheries.....	9
Total.....	133

This is exclusive of 4 vessels loaned to the Coast and Geodetic Survey by the Philippine government and of 2 steam launches and 30 motor boats operated by the Bureau of Fisheries.

The services of the Department include surveying, charting, and lighting the Atlantic, Pacific, and Gulf coasts of the continental United States, the shores of Alaska, and the Aleutian Islands, Hawaii, and Porto Rico, lighting of the Great Lakes with their connecting rivers and other navigable streams, and surveying of the coasts of the Philippine Islands, their adjacent waters, and the shores of Guam and of Samoa.

The Bureau of Fisheries maintains 36 main and 94 auxiliary fish hatcheries and cultural stations and exercises supposed supervision over the salmon fisheries of Alaska and over the native community and the seal and fox herds on the Pribilof Islands, in the Bering Sea. As explained in my last report, the supervision exercised by the Bureau of Fisheries over the numerous salmon canneries and the fisheries along the Alaskan coast has been more alleged than real. The condition has been one admirably suited to a comic opera. Four salmon agents have been supposed, with-

out boats or other means of transit, to cover many thousand miles of coast, much of it without regular passenger lines. They have been forced, therefore, into the absurd position of calling upon the canneries which they were to inspect to lend them boats in order that they might reach the cannery to inspect it. This admirable example of "how not to do it" has been going on for years. On learning the facts Congress provided a fund of \$50,000 from which to secure vessels to provide proper means of transit for doing this work. When it shall furnish the men necessary, the ridiculous position that the Government has in this respect long occupied will cease to exist.

The Bureau of Standards has laboratories in Washington and Pittsburgh and has conducted cement testing through a special plant for that purpose located at Northampton, Pa. This great and fruitful service maintains close and increasing touch with State and municipal authorities and with industries all over the land. Its aid to other Government departments is invaluable.

The Coast and Geodetic Survey maintains, in addition to its extensive surveying and charting operations, magnetic observatories at Cheltenham Md.; Tucson, Ariz.; Vieques, P. R.; Sitka, Alaska; and Honolulu, Hawaii, and takes tidal observations at regular stations in Maine, New York, New Jersey, Pennsylvania, Maryland, Florida, Texas, California, Washington, and Alaska.

This Survey is the oldest scientific service of the Government. It is also the greatest of its kind in the world, and the efficiency of its work is as marked as its extent; it is so recognized by other nations. Its methods and standards are approved by all who have accurate knowledge of the subject. There are single features of its work which are greater than the combined services of a similar nature of like departments in other great nations. Comparison, for example, of the tremendous task of surveying and charting the coasts of Alaska and the Aleutian Islands with that involved in the coast surveys of France or Great Britain will show to anyone the burden which this service so ably bears. Its duties in the Philippine Islands are of greater extent and importance, alike locally, nationally, and internationally, than are those of the entire like service of many another great nation.

The duty of the Coast Survey deals first with humanity and second with commerce. Its work comes foremost in the protection of life and property along our shores and in opening the way for trade; yet after an experience of 20 months I affirm, without

fear of successful contradiction, that the past attitude of the Government toward the Coast and Geodetic Survey, if the magnitude of its task be considered and the quality of its work be weighed, has been both with respect to its housing, its vessels, and to the necessary apparatus for its serious tasks, and particularly as regards the Pacific coast and Alaska, like that of a wealthy and prosperous man refusing to give to his loyal children the necessities of life.

I speak of this in detail later. It is thus placed in the forefront of my report and with intended emphasis that this Department may not have upon its conscience and its record the responsibility for the loss of human life and property that has ensued from penuriousness respecting this service in the past and will ensue unless this policy is changed.

These are strong words. They are amply justified. Their truth can not be successfully challenged. Our citizens have been drowned (31 in one case) and both private and public property repeatedly lost because the United States Government has not more rapidly provided the force and apparatus with which to survey and chart the dangerous waters of our Pacific and particularly of our Alaskan coast.

The Bureau of Foreign and Domestic Commerce has in operation offices in New York, Chicago, San Francisco, New Orleans, Boston, Atlanta, Seattle, and St. Louis. None of these was in existence when the present administration took charge. They have been established to bring the services of this great Bureau closer to the business public. They have met with a welcome that has been embarrassing in its extent. Other cities, among them Pittsburgh, Detroit, and Baltimore, have applied to have similar offices established in them. The Department earnestly desires to extend this service and will do so as fast as funds are provided.

The Bureau of Navigation enforces the navigation laws of the United States along the Atlantic coast and in the rivers and harbors connected therewith. It acknowledges with thanks the efficient aid of the Steamboat-Inspection Service, of the Revenue-Cutter Service, and of the customs collectors in this important work, the details of which are given later.

The Steamboat-Inspection Service was never more effective than now, and steadily gains in efficiency. It is manned with an admirable staff, showing a fine professional spirit, keenly conscious of the importance of its duty in safeguarding life and property, doing its work with firmness and with tact.

The Bureau of the Census is for the first time properly housed. Its invaluable records are for the first time safeguarded against fire. It has completed the inherited work of the Thirteenth Census and is taking up the census of manufactures, soon to be taken as of December 31, 1914, in an enthusiastic spirit, with effective methods. It looks forward to the agricultural census to be taken under the act of July 2, 1909, as a further opportunity for improved service.

The Bureau of Lighthouses is the greatest organization of its kind and is maintained at a high standard. Through the liberality of Congress and by careful economy of funds it has been found possible for the first time to equip a number of its seagoing tenders with wireless apparatus and to bring the wages paid to its seamen upon the Atlantic coast a little more in harmony with those paid by other Government services and by private parties. Both measures tend directly to cheaper and better service. The wise provision by Congress of \$60,000 in an appropriation for aids to navigation in Alaska has permitted the taking of prompt steps for marking known dangers in those waters. Before, however, the coast of Alaska can be properly marked a vessel of sufficient size to keep the sea and do its work in rough weather must be provided. A former tender in Alaskan waters was wrecked upon an unknown rock. This was a needless waste of property, but there have been many more like it in those waters. Legislation is now pending to provide a suitable vessel.

It is with regret that as this report is written we are preparing to part with the Bureau of Corporations, which becomes the nucleus of the new Federal Trade Commission. That Bureau has been one of the valuable adjuncts of the Department. Its work has been done well but without excitement or the spirit of self-advertising. It has been a privilege to be associated with its staff, from its head downward, and the experience derived from pleasant personal association in a common work affords a sound basis for belief in the success of that service in its enlarged field.

The above survey is both brief and partial but gives a glance at the extent of the Department's work. The operations of each bureau are separately considered later.

The appropriations for the current fiscal year (ending June 30, 1915) provide for the use of the Department the sum of \$11,689,829.05. The estimates for the fiscal year ending June 30, 1916, including \$430,000 for printing and binding and exclud-

ing \$1,831,900 not directly estimated for public works for the Lighthouse Service, total \$17,201,095, an increase of \$5,511,265.95 over the appropriations for 1915.

The largest single item in the increased fund requested is the necessary provision for the census of agriculture, which is by law required to be taken in the year 1915 as of October 1. The sum required for this work is \$3,103,500. Another considerable item is the renewed request on behalf of the Coast and Geodetic Survey for three new vessels for Alaska and three small vessels (large launches) for wire-drag work and resurveys on the Atlantic coast. The statements made in my last report upon this subject are reaffirmed and are emphasized by the recent loss of the United States revenue cutter *Tahoma*, one further sacrifice to the uncharted dangers of Alaskan waters. Such sacrifices must and will continue until we deal with this problem as its importance requires. The subject is treated fully under the heading of the Coast and Geodetic Survey.

The plan for reorganizing and strengthening the Bureau of Foreign and Domestic Commerce, to which attention was given in detail in my last annual report, has been developed actively during the fiscal year 1914. Through the helpful action of Congress this important branch of the Department is now much more adequately equipped for useful and effective trade-promotion service than ever before. A number of new positions have been provided to reinforce the central office in Washington, and increased appropriations for the field service, both at home and abroad, are now available.

The United States is one of the three foremost commercial nations. It is essential to its prosperity that it should be inferior to no other country in its governmental system for the fostering and protection of its trade, both domestic and foreign. Such a system is now firmly established. In foreign countries the admirable trade-development work which the consular officers of the Department of State carry on is now to be supplemented through the service of a corps of commercial attachés, which will fill a gap heretofore existing in our organization as compared with that of other nations. These, with the group of special traveling investigators or commercial agents who continue the valuable technical studies of markets abroad, constitute for the first time in the foreign field a complete and well-balanced system of Federal aid to trade in foreign lands.

The country is to be congratulated that under existing conditions it has by the wise liberality of Congress been provided dur-

ing the past year not only with a well-rounded system of obtaining information abroad but with another for utilizing that information at home. The matter is treated in detail under the heading of the Bureau.

It is a pleasure to acknowledge the support of Congress in dealing with certain suggestions in my last report, and it is my belief that even more would have been done had Congress realized the exact facts. The American people do not, in my belief, understand that their Government is obliged for lack of money to buy old, secondhand vessels and use them in dangerous waters, at a high cost for repair and for services for which they were not designed. Neither the American people nor Congress desire that lives shall continue to be sacrificed when measures can be taken which will stop the sacrifice at trifling cost. In my belief, both Congress and the American people are willing to spend for needful work well done whatever that work requires for its reasonable performance. It is in this spirit that I shall lay before Congress again the estimates for this Department for the coming fiscal year.

There is so much talk about governmental extravagance that the people hardly understand that some of their services are run upon a basis that it would be lavish to call frugal. They do not want their officers who must stay at sea to be obliged to eat and sleep and wash in the same room as they are now obliged to do. They are just as anxious that their seamen shall have sufficient room and air in which to sleep as they are that their children shall be provided with air in schoolhouses. It has been suggested as perhaps a kindly criticism of administrative officers that they are properly enthusiastic over their own work, but no such disclaimer will do away with hard facts. When a steamer must do work at sea that has not sufficient power for steerageway in heavy weather, the risk and the responsibility can not lie upon this Department, but must rest with those to whom, when the facts are plainly stated, is given the honorable duty of providing funds that such conditions shall no longer exist.

Under the supervision of the Chief Clerk and Superintendent, the libraries formerly maintained by the several bureaus when separated have been consolidated. The library of the Bureau of the Census was the last one to be made a part of the general library, and the librarian of that Bureau has been placed in charge. The consolidation has already resulted in greater efficiency, and will save money by dispensing with the purchase of many duplicate copies of books and periodicals and with the

binding of duplicate copies of foreign publications, which was necessary when the various bureaus maintained separate libraries.

The Department has dispensed with the telegraph office formerly maintained by the Bureau of the Census. The telegraphic business of that Bureau is now handled in conjunction with the work of the general telegraph office of the Department. In like manner the private telephone exchange formerly maintained by the Bureau of the Census has been discontinued and its service consolidated with the Department switchboard. Through this action five distinct telephone lines and an operator have been saved.

In consolidating the carpenter shop formerly maintained by the Bureau of the Census, there was transferred to the carpenter shop of the Bureau of Standards machinery and equipment valued at approximately \$2,420 which it would otherwise have been necessary for the latter Bureau to purchase.

About 3 miles in length (15,265 linear feet) of dilapidated wooden shelving which was in use throughout the Department has been replaced with steel shelving. The Bureau of Foreign and Domestic Commerce has been furnished with steel vertical letter units.

The Department purchased during the fiscal year 132 typewriters, 99 for use in the District of Columbia and 33 for outside service. The total cost of these was \$9,357.40. The allowance for old machines given in exchange was \$2,827, making a net cash outlay for new machines of \$6,530.40, an average net cash price of \$49.47 paid for each machine.

The stable equipment of the Department formerly consisted of 11 horses, 5 wagons, 4 carriages, 1 runabout, 1 omnibus, and an electric truck. Through the union of the Department in one building this equipment has been gradually reduced so that the Department has now, in addition to the gasoline truck previously mentioned, but 5 horses, 4 carriages, 1 wagon, 1 omnibus, and 1 electric truck. This will be further reduced as soon as a new gasoline truck is delivered, for which an order has been placed, by 1 horse, 1 wagon, 1 omnibus, and the electric truck, which is nearly worn out. Coincident with this has been a reduction of rent for stable purposes from \$1,800 to \$1,000 per annum.

A special departmental messenger and mail service has been established between the Commerce Building, the Capitol, the several executive departments, and the Government Printing Office. All urgent mail from the various offices in the building is sent to the mail room on the first floor, where it is collected for delivery by special messengers, who leave the building every hour during the day.

Arrangements have been made for serving coffee and hot lunches on the third, sixth, and ninth floors of the Commerce Building during the luncheon period; and to avoid congestion in the halls and to serve the convenience of employees the office hours for the Bureau of the Census have been fixed at from 8.45 a. m. to 4.15 p. m., and those for other employees at from 9 a. m. to 4.30 p. m.

Appropriations and Expenditures.

The itemized statement of the disbursements from the contingent fund of the Department of Commerce and the appropriation for "General expenses, Bureau of Standards," for the fiscal year ended June 30, 1914, required to be submitted to Congress by section 193 of the Revised Statutes of the United States; the itemized statement of expenditures under all appropriations for propagation of food fishes during the fiscal year ended June 30, 1914, required by the act of Congress approved March 3, 1887 (24 Stat., 523); and a statement showing travel on official business by officers and employees (other than the special agents, inspectors, and employees in the discharge of their regular duties, who are required to travel constantly) from Washington to points outside of the District of Columbia during the fiscal year ended June 30, 1914, as required by the act of Congress approved May 22, 1908 (35 Stat., 244), will be transmitted to Congress in the usual form.

The following table shows the total amounts of all appropriations for the various bureaus and services of the Department of Commerce for the fiscal year ended June 30, 1914:

Bureau.	Legislative act.	Sundry civil act.	Deficiency act.	Special acts.	Total.
Office of the Secretary	^a \$281,480.00		\$6,562.68		\$288,042.68
Bureau of Corporations.....	253,300.00				253,300.00
Bureau of Lighthouses.....	64,510.00	\$5,007,420.00	724,985.69		5,796,915.69
Bureau of the Census.....	1,122,820.00		2,500.00		1,125,320.00
Bureau of Foreign and Domestic Commerce.....	174,860.00		50,000.00		224,860.00
Steamboat-Inspection Service....	534,740.00		8,000.20		542,740.20
Bureau of Navigation.....	160,510.00			\$5,408.79	165,918.79
Bureau of Standards.....	555,940.00	45,000.00	2,000.74		602,940.74
Coast and Geodetic Survey.....		1,024,420.00	2.44		1,024,422.44
Bureau of Fisheries.....		1,087,180.00	1.10		1,087,181.10
Allotment for printing and binding.....		^b 525,000.00			^b 525,000.00
Total.....	3,148,160.00	7,689,020.00	794,052.85	5,408.79	11,636,641.64

^a Of this amount, \$50,497.50 was transferred to the Department of Labor.

^b Of this amount, \$84,000 was transferred to the Department of Labor.

The disbursements by the Disbursing Clerk of the Department of Commerce during the fiscal year ended June 30, 1914, arranged according to items of appropriation, are as follows:

OFFICE OF THE SECRETARY.

Salaries, Office of Secretary of Commerce, 1913.....	\$6, 130. 63
Salaries, Office of Secretary of Commerce, 1914.....	139, 619. 44
Contingent expenses, Department of Commerce and Labor, 1912.....	26. 53
Contingent expenses, Department of Commerce, 1913.....	27, 195. 08
Contingent expenses, Department of Commerce, 1914.....	65, 790. 90
Rent, Department of Commerce, 1913.....	4, 111. 84
Rent, Department of Commerce, 1914.....	51, 909. 73
Total.....	<u>294, 784. 15</u>

BUREAU OF CORPORATIONS.

Salaries, Bureau of Corporations, 1913.....	3, 150. 12
Salaries, Bureau of Corporations, 1914.....	70, 296. 03
Salaries and expenses, special attorneys, Bureau of Corporations, 1912..	1. 00
Salaries and expenses, special attorneys, Bureau of Corporations, 1913..	6, 435. 11
Salaries and expenses, special attorneys, Bureau of Corporations, 1914..	136, 195. 11
Total.....	<u>216, 077. 37</u>

BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

Salaries, Bureau of Foreign and Domestic Commerce, 1913.....	4, 366. 83
Salaries, Bureau of Foreign and Domestic Commerce, 1914.....	98, 931. 23
Collating tariffs of foreign countries, 1913.....	443. 90
Collating tariffs of foreign countries, 1914.....	9, 040. 94
Promoting commerce, Department of Commerce, 1913.....	3, 273. 96
Promoting commerce, Department of Commerce, 1914.....	20, 959. 67
Investigating cost of production, Department of Commerce, 1914.....	29, 079. 68
Payment to Jose de Olivares (deficiency act approved June 25, 1910)...	13. 69
Total.....	<u>166, 109. 90</u>

BUREAU OF STANDARDS.

Salaries, Bureau of Standards, 1913.....	9, 707. 99
Salaries, Bureau of Standards, 1914.....	258, 550. 87
Laboratory, Bureau of Standards.....	25, 911. 74
Equipment, Bureau of Standards, 1912.....	16. 56
Equipment, Bureau of Standards, 1913.....	18, 993. 79
Equipment, Bureau of Standards, 1914.....	56, 759. 89
General expenses, Bureau of Standards, 1912.....	71. 29
General expenses, Bureau of Standards, 1913.....	3, 271. 58
General expenses, Bureau of Standards, 1914.....	19, 474. 91
Investigating effects of electric currents, Bureau of Standards, 1912.....	70. 20
Investigating effects of electric currents, Bureau of Standards, 1913.....	824. 45
Testing machines, Bureau of Standards, 1913.....	4, 138. 21
Testing machines, Bureau of Standards, 1914.....	24, 193. 46
Testing structural materials, Bureau of Standards, 1912.....	1. 25
Testing structural materials, Bureau of Standards, 1913.....	5, 808. 02
Testing structural materials, Bureau of Standards, 1914.....	69, 072. 97

Improvement and care of grounds, Bureau of Standards, 1913.....	\$401. 09
Improvement and care of grounds, Bureau of Standards, 1914.....	2, 888. 27
Refrigeration constants, Bureau of Standards, 1913.....	4, 994. 69
Refrigeration constants, Bureau of Standards, 1914.....	11, 466. 73
Current meter testing tank, Bureau of Standards, 1913.....	3, 694. 05
Electrical laboratory equipment, Bureau of Standards, 1913-14.....	22, 777. 17
High-potential investigations, Bureau of Standards, 1914.....	13, 756. 54
Testing railroad scales, Bureau of Standards, 1914.....	18, 573. 56
Investigation of fire-resisting properties, Bureau of Standards, 1914.....	8, 408. 54
Workshop and storehouse, Bureau of Standards.....	19, 578. 77
Total.....	603, 406. 59

BUREAU OF NAVIGATION.

Salaries, Bureau of Navigation, 1913.....	1, 335. 87
Salaries, Bureau of Navigation, 1914.....	31, 615. 79
Salaries, Shipping Service, 1913.....	2, 481. 03
Salaries, Shipping Service, 1914.....	26, 668. 48
Clerk hire, Shipping Service, 1913.....	2, 919. 00
Clerk hire, Shipping Service, 1914.....	31, 489. 18
Contingent expenses, Shipping Service, 1913.....	1, 650. 80
Contingent expenses, Shipping Service, 1914.....	5, 198. 38
Enforcement of navigation laws, 1913.....	4, 745. 12
Enforcement of navigation laws, 1914.....	13, 666. 24
Enforcement of wireless-communication laws, 1913.....	9, 737. 31
Enforcement of wireless-communication laws, 1914.....	34, 065. 80
Admeasurement of vessels, 1914.....	1, 723. 27
Total.....	167, 296. 27

STEAMBOAT-INSPECTION SERVICE.

Salaries, Office of Supervising Inspector General, Steamboat-Inspection Service, 1913.....	610. 03
Salaries, Office of Supervising Inspector General, Steamboat-Inspection Service, 1914.....	13, 884. 98
Salaries, Steamboat-Inspection Service, 1913.....	28, 502. 29
Salaries, Steamboat-Inspection Service, 1914.....	315, 256. 57
Clerk hire, Steamboat-Inspection Service, 1913.....	6, 880. 10
Clerk hire, Steamboat-Inspection Service, 1914.....	75, 550. 77
Contingent expenses, Steamboat-Inspection Service (no year).....	. 20
Contingent expenses, Steamboat-Inspection Service, 1912.....	2. 26
Contingent expenses, Steamboat-Inspection Service, 1913.....	11, 650. 29
Contingent expenses, Steamboat-Inspection Service, 1914.....	66, 040. 56
Steamboat-Inspection Service, Los Angeles, Cal., 1914.....	4, 008. 29
Total.....	522, 386. 34

BUREAU OF FISHERIES.

Salaries, Bureau of Fisheries, 1913.....	29, 338. 58
Salaries, Bureau of Fisheries, 1914.....	340, 775. 71
Miscellaneous expenses, Bureau of Fisheries, 1912.....	43. 40
Miscellaneous expenses, Bureau of Fisheries, 1913.....	61, 142. 34

Miscellaneous expenses, Bureau of Fisheries, 1914.....	\$378, 636. 48
Protecting seal fisheries of Alaska.....	1, 481. 37
Protecting seal and salmon fisheries of Alaska, 1913.....	3, 520. 04
Protecting seal and salmon fisheries of Alaska, 1913-14.....	35, 688. 98
Protecting seal and salmon fisheries of Alaska, 1914.....	26, 360. 15
Biological station, Mississippi River Valley.....	5, 886. 35
Marine biological station, Florida.....	543. 35
Steamer <i>Albatross</i> , repairs, 1914.....	39, 283. 00
Payment to Great Britain and Japan.....	20, 000. 00
Distribution cars, Bureau of Fisheries, 1914.....	63. 73
Philippine fisheries report.....	642. 30
Fish hatcheries:	
Green Lake, Me.....	504. 28
Kentucky.....	17, 108. 67
Puget Sound, Wash.....	7, 875. 38
South Carolina.....	18, 167. 24
Upper Mississippi Valley.....	6, 807. 19
Utah.....	289. 40
West Virginia.....	795. 00
Wyoming.....	267. 75
Total.....	995, 220. 69

BUREAU OF THE CENSUS.

Salaries, Bureau of the Census, 1913.....	28, 762. 46
Salaries, Bureau of the Census, 1914.....	664, 022. 85
Collecting statistics, Bureau of the Census, 1913.....	10, 959. 81
Collecting statistics, Bureau of the Census, 1914.....	361, 907. 13
Cotton statistics, Bureau of the Census, 1913.....	13. 75
Rent, Bureau of the Census, 1913.....	1, 750. 00
Rent, Bureau of the Census, 1914.....	19, 250. 00
Tabulating machines, Bureau of the Census, 1913.....	736. 74
Tabulating machines, Bureau of the Census, 1914.....	10, 764. 73
Temporary clerks, Bureau of the Census, 1913.....	8, 086. 67
Expenses of the Thirteenth Census, 1910-12.....	175. 50
Tobacco statistics, Bureau of the Census, 1914.....	1, 841. 44
Total.....	1, 108, 271. 08

BUREAU OF LIGHTHOUSES.

Salaries, Bureau of Lighthouses, 1913.....	2, 787. 64
Salaries, Bureau of Lighthouses, 1914.....	60, 102. 01
General expenses, Lighthouse Service, 1912.....	6, 497. 12
General expenses, Lighthouse Service, 1913.....	26, 327. 39
General expenses, Lighthouse Service, 1914.....	48, 753. 61
Salaries, Lighthouse Service, 1913.....	287. 50
Salaries, Lighthouse Service, 1914.....	10, 616. 67
Salaries, lighthouse vessels, 1914.....	18, 849. 92
Salaries, lighthouse vessels, 1912.....	6. 67
Salaries, keepers of lighthouses, 1914.....	19, 828. 24
Aids to navigation, St. Marys River, Mich.....	27, 000. 00
Fort McHenry Channel Range Lights, Md.....	28, 228. 41
Sand Island Light Station, Ala.....	13, 135. 49
Thimble Shoal Light Station, Va.....	39, 927. 11
Tender for first lighthouse district.....	1, 077. 07

Tender for fifteenth lighthouse district.....	\$18, 530. 22
Tender for engineer, third lighthouse district.....	287. 71
Tender for engineer, sixth lighthouse district.....	715. 00
Point Abino Light Vessel, Lake Erie.....	51, 146. 28
Light vessels for general service.....	51, 625. 78
Oil houses for light stations.....	160. 60
Lighting Norfolk Harbor, Va.....	12, 663. 70
Detroit River lights, Mich.....	29, 641. 60
Brandywine Shoal Light Station, Del.....	41, 910. 00
Buffalo Breakwater, North End Light Station, N. Y.....	6, 335. 00
Kauai Island Light Station, Hawaii.....	288. 24
Cape Fear River lights, N. C.....	22, 521. 40
Southwest Pass Light Vessel, Mississippi River, La.....	150. 00
Total.....	<u>539, 400. 38</u>
Grand total.....	<u>4,612,952.77</u>

The following statement shows the expenditures during the fiscal year ended June 30, 1914, on account of all appropriations under the control of the Department, giving the total amounts disbursed by the various disbursing officers of the Department and miscellaneous receipts for the same period:

By the Disbursing Clerk, Department of Commerce, on account of salaries and expenses of the Office of the Secretary of Commerce, the Bureaus of Corporations, Foreign and Domestic Commerce, Navigation, Standards, Fisheries, and Lighthouses, the Office of the Supervising Inspector General, Steamboat-Inspection Service, salaries and expenses of Steamboat-Inspection Service at large, and public works of the Lighthouse and Fisheries Services (shown in detail in the foregoing table of disbursements).....	\$4, 612, 952. 77
By the authorized disbursing officers of the Lighthouse Service.....	4, 943, 710. 37
By the special disbursing agent, Coast and Geodetic Survey, on account of salaries and expenses of the Coast and Geodetic Survey.....	991, 271. 48
By the commercial agents of the Department investigating trade conditions abroad, as special disbursing agents.....	47, 840. 54
By special disbursing agents, Bureau of Fisheries.....	30, 371. 69
By warrants drawn on the Treasurer of the United States to satisfy accounts settled by the Auditor for the State and Other Departments, classified as follows:	
Office of the Secretary.....	\$296. 85
Bureau of Corporations.....	22. 15
Foreign and Domestic Commerce.....	2, 431. 19
Bureau of Standards.....	3, 676. 41
Steamboat-Inspection Service.....	125. 14
Bureau of Navigation.....	6, 403. 60
Bureau of Fisheries.....	8, 772. 17
Bureau of the Census.....	123, 400. 54
Bureau of Lighthouses.....	206, 458. 54
Coast and Geodetic Survey.....	<u>35, 901. 63</u>
	387, 488. 22
Printing and binding.....	<u>410, 700. 77</u>
Total.....	<u>11, 424, 335. 84</u>

MISCELLANEOUS RECEIPTS, FISCAL YEAR 1914.

Coast and Geodetic Survey: Sale of Charts, Tide Tables, etc.....	\$20,951. 57
Bureau of Standards: Standardizing and testing weights, etc.....	8,158. 37
Bureau of Navigation:	
Navigation fines.....	40,741. 38
Navigation fees.....	152,694. 19
Bureau of Fisheries:	
Sale of sealskins.....	51,567. 61
Sale of fox skins.....	17,175. 00
Treasury settlements.....	3,780. 04
Bureau of Lighthouses: Treasury settlements.....	3,893. 93
Proceeds of sale of condemned property, etc., by the Department.....	24,919. 28
Total	323,881. 37
Other receipts:	
Annual yacht tax.....	446,870. 50
Tonnage tax.....	1,310,759. 03
Grand total	2,081,510. 90

The following unexpended balances of appropriations were turned into the surplus fund June 30, 1914, in accordance with the act of June 20, 1874 (18 Stat., 110-111):

Salaries, Office of Secretary of Commerce and Labor, 1912.....	\$2,725. 15
Salaries and expenses, commercial agents, Department of Commerce and Labor, 1911.....	6. 45
Salaries and expenses, commercial agents, Department of Commerce and Labor, 1912.....	7,220. 33
Rent, Department of Commerce and Labor, 1910.....	1. 25
Rent, Department of Commerce and Labor, 1912.....	2,404. 61
Contingent expenses, Department of Commerce and Labor, 1912.....	5,699. 10
Salaries, Bureau of Corporations, 1912.....	5,081. 42
Salaries and expenses, special attorneys, etc., Bureau of Corporations, 1912.....	39,987. 81
Expenses of the Thirteenth Census, 1910-12.....	626. 92
Salaries, Bureau of Manufactures, 1912.....	316. 00
Salaries, Bureau of Statistics, 1912.....	365. 56
Collecting statistics relating to commerce, 1912.....	197. 43
Collating tariffs of foreign countries, 1912.....	758. 96
Salaries, Office of Supervising Inspector General, Steamboat-Inspection Service, 1912.....	132. 78
Salaries, Steamboat-Inspection Service, 1912.....	2,544. 60
Clerk hire, Steamboat-Inspection Service, 1912.....	815. 35
Contingent expenses, Steamboat-Inspection Service, 1912.....	10,100. 67
Salaries, Bureau of Navigation, 1912.....	731. 93
Salaries, Shipping Service, 1912.....	1,308. 16
Clerk hire, Shipping Service, 1912.....	218. 31
Contingent expenses, Shipping Service, 1912.....	538. 36
Instruments for measuring vessels and counting passengers, 1912.....	301. 14
Enforcement of navigation laws, 1912.....	204. 19
Enforcement of wireless communication laws, 1912.....	39. 81
Salaries, Bureau of Standards, 1912.....	12,289. 04
Equipment, Bureau of Standards, 1912.....	1,440. 61
General expenses, Bureau of Standards, 1912.....	403. 82

Improvement and care of grounds, Bureau of Standards, 1912.....	\$107. 07
Investigating effects of electric currents, Bureau of Standards, 1912.....	122. 69
Testing machines, Bureau of Standards, 1912.....	222. 08
Testing structural materials, Bureau of Standards, 1912.....	70. 33
Salaries, Coast and Geodetic Survey, 1912.....	4, 475. 47
Party expenses, Coast and Geodetic Survey, 1911-12.....	13, 227. 65
Party expenses, Coast and Geodetic Survey, 1912.....	5, 138. 91
General expenses, Coast and Geodetic Survey, 1912.....	502. 59
Pay, etc., of officers and men, vessels, Coast Survey, 1912.....	22, 447. 42
Repairs of vessels, Coast Survey, 1912.....	920. 50
Salaries, Bureau of Lighthouses, 1912.....	701. 65
General expenses, Lighthouse Service, 1912.....	21, 827. 13
Salaries, keepers of lighthouses, 1912.....	16, 001. 56
Salaries, lighthouse vessels, 1912.....	70, 354. 45
Salaries, Lighthouse Service, 1912.....	26, 081. 22
Expenses of buoyage, 1911.....	248. 63
Expenses of light vessels, 1911.....	108. 20
Edgemoor lighthouse depot, Del.....	31. 57
Bogue Sound Range Light, N. C.....	234. 31
Frying Pan Shoal Light Vessel, N. C.....	10, 860. 38
Sand Island Light Station, Ala.....	791. 16
North Point Light Station, Wis.....	417. 85
Barge for lighthouse depot, St. Joseph, Mich., 1911-12.....	7, 000. 00
Point Loma Light Station, Cal.....	50. 14
San Pedro Breakwater Light Station, Cal.....	635. 55
Battery Point fog signal, Wash.....	363. 52
Relief light vessel for ninth and eleventh lighthouse districts.....	194. 40
Salaries, Bureau of Fisheries, 1912.....	13, 352. 07
Miscellaneous expenses, Bureau of Fisheries, 1912.....	19, 367. 95
Protecting seal and salmon fisheries of Alaska, 1911-12.....	2, 216. 59
Protecting the sponge fisheries, 1912.....	4, 800. 60
Biological station, Mississippi River Valley.....	268. 16
Marine biological station, North Carolina.....	1. 78
Fish hatchery, Green Lake, Me.....	449. 26
Fish hatchery, West Virginia.....	17. 03
Steam vessel for Alaska.....	7, 000. 00
Steamer <i>Fish Hawk</i> , repairs.....	92. 85
Total.....	347, 162. 48

Personnel.

The creation of the Department of Labor had the effect of taking away from the Appointment Division the general supervision over the appointment work of a personnel consisting of 1,827 employees. This caused a small reduction in the force of the Division, which reduction has been partly met, however, by the transfer to the Secretary's roll of employees who had been serving by detail from the Bureau of the Census. The net reduction in the salary roll at the close of the fiscal year amounted to \$2,340, with no details from the various bureaus. The increasing demands for information, the frequent changes in the personnel, and the adop-

tion of additional safeguards designed to protect the Government's interests more than counterbalance any saving which has been effected by the introduction of improved and more economical methods of operation.

The accompanying table shows by bureaus the number of permanent positions in the Department on July 1, 1914, and the increase or decrease in each bureau as compared with July 1, 1913. The figures do not include temporary appointments, nor do they include the following appointments or employments not made by the head of the Department: Persons engaged in rodding, chaining, recording, heliotroping, etc., in field parties of the Coast and Geodetic Survey; temporary employments in field operations of the Bureau of Fisheries; mechanics, skilled tradesmen, and laborers employed under authority of Schedule A, Subdivision I, section 12, of the civil-service rules in the Lighthouse Service. Enlisted men on vessels of the Coast Survey in the Philippines, paid by the insular government of the Philippine Islands, are also excluded. The total of these excluded miscellaneous employments and enlistments is approximately 9,482.

Bureau.	Statutory.	Non-statutory.	Total.	In District of Columbia.	Outside District of Columbia.	Increase (+) or decrease (-).
Office of the Secretary.....	126	.....	126	126	.....	- 13
Bureau of the Census.....	621	756	1,377	640	737	+ 1
Bureau of Corporations.....	63	70	133	133	.....	+ 6
Bureau of Foreign and Domestic Commerce.....	83	37	120	94	26	+ 12
Bureau of Standards.....	230	108	338	296	42	+ 26
Bureau of Fisheries.....	392	5	397	80	317	- 1
Bureau of Lighthouses.....	57	5,563	5,620	42	5,578	- 4
Coast and Geodetic Survey.....	246	482	728	264	464	+ 381
Bureau of Navigation.....	40	61	101	28	73	+ 6
Steamboat-Inspection Service.....	196	69	265	9	256	+ 3
Total.....	2,054	7,151	9,205	1,712	7,493	+ 417

^a Includes 372 enlisted men on vessels who in previous reports have been included under miscellaneous employments. The actual increase in the force was 9 persons, employed under lump appropriations.

The following table gives a summary of changes in the personnel of the Department during the fiscal year ended June 30, 1914:

Bureau.	Appointments, etc.			Separations.			Miscellaneous changes.		
	Perma- nent.	Tem- porary.	Total.	From perma- nent posi- tions.	From tempo- rary posi- tions.	Total.	Prom- otions.	Red- uctions.	Mis- cella- neous.
Office of the Secretary.....	30	2	32	25	3	28	14	1	3
Bureau of the Census.....	616	12	628	608	1	609	88	16	49
Bureau of Corporations.....	22	2	24	14	1	15	54	.....	.....
Bureau of Foreign and Do- mestic Commerce.....	44	33	77	25	17	42	35	4	27
Bureau of Standards.....	113	38	151	49	42	91	131	1	72
Bureau of Fisheries.....	69	28	97	55	16	71	45	12	40
Bureau of Lighthouses.....	324	110	434	305	104	409	301	95	197
Coast and Geodetic Survey..	57	57	114	38	44	82	118	6	40
Bureau of Navigation.....	22	11	33	13	12	25	12	.....	11
Steamboat-Inspection Serv- ice.....	15	4	19	15	2	17	10	1	3
Total.....	1,312	297	1,609	1,147	242	1,389	808	136	444

Vacancies in presidential positions have been filled during the fiscal year ended June 30, 1914, as follows:

Position.	Compensa- tion.	Authority.
Director of the Census ^a	\$6,000	32 Stat., §1.
Superintendent of naval construction, Bureau of Lighthouses ^b	3,000	36 Stat., 827.
Supervising inspector, fifth district, Steamboat-Inspection Service, with headquarters at Boston, Mass.	3,000	R. S., 4404.
Supervising inspector, sixth district, Steamboat-Inspection Service, with headquarters at Louisville, Ky. ^c	3,000	Do.

^a Appointment confirmed by the Senate, June 26, 1913, and appointee commissioned on same date. Assumed office July 1, 1913.

^b Position filled by transfer of a classified competitive employee in the Lighthouse Service. Confirmation by Senate not required.

^c Position filled by promotion of a classified competitive employee in the same service.

Since the end of the fiscal year three presidential appointments have been made, namely, Chief of the Bureau of Foreign and Domestic Commerce, (First) Assistant Chief of the Bureau of Foreign and Domestic Commerce, and (Second) Assistant Chief of the Bureau of Foreign and Domestic Commerce. Two of the appointees originally entered the service through competitive civil-service examination.

In considering recommendations for promotions the Department in the past has utilized its efficiency records, which were obtained as a result of the investigations made in 1906, 1909, and 1911. No investigation has been made since 1911, because

Congress has imposed upon the Civil Service Commission the duty of establishing an efficiency system for the various executive departments; and as the commission has not yet established such a system, the Department has no current efficiency records which might be used for the purpose stated. It can and does, of course, consider the ratings taken in 1911, but only to a limited extent, owing to the numerous changes which have since occurred. It is the practice to give very close attention to the merits of individual cases as submitted by bureau chiefs, who, in addition to any special reasons which exceptional cases may involve, support their recommendations by a certificate to the effect that the records of the various employees have been carefully considered, and that the persons recommended are most entitled to advancement by reason of their superior efficiency and the character of work on which they are engaged. The policy of this Department to select officers and employees from the lower grades to fill vacancies in higher positions, whenever practicable, is proving an incentive to increased efficiency.

By reason of the removal of the Bureau of the Census to the Commerce Building the labor, watch, char, and engineer forces of this Bureau and the Office of the Secretary were consolidated, and it became necessary, therefore, to dispense with 28 subclerical positions in the Census Bureau at the close of the fiscal year. The Department, as early as April 9, 1914, took up the question of providing for 25 employees (still remaining) whose services would not be required after June 30, 1914. At the close of the fiscal year 24 of these employees had been provided for.

The Department of the Interior during the early part of the present calendar year invited attention to the contemplated reduction in the clerical and examining forces of the Bureau of Pensions, and requested that consideration be given to the matter of transferring some of the employees whose services in that bureau would probably be discontinued by operation of law on July 1, 1914; also to other employees who could be transferred advantageously from that bureau to suitable positions in this Department. At the close of the year five of the employees of the Bureau of Pensions had been provided for in this Department.

In the reorganization of the force of the Bureau of Foreign and Domestic Commerce, to meet the terms of the legislative, executive, and judicial appropriation act for the fiscal year 1915, the number of subclerical employees was reduced from 11 to 5, thus abolishing

6 subclerical positions. While the bill was pending in Congress steps were taken along the same lines as in the case of the Census employees, with the view of making provision for the 6 employees affected.

In spite of the occasional loss of aged employees, due usually to death or resignation, superannuation still increases, thus accentuating the disadvantages of an impaired service, the discouragement of a retarded rate of promotion for young and deserving employees, and the feeling of unrest and perhaps dread of dismissal by those who are aware of the fact that the best service they are able to render does not reach the average standard of the younger employees of the same class and grade. While superannuation probably exists, it has been found difficult under present conditions to obtain admissions of the actual conditions from the higher officials under whom aged employees serve. Naturally, so far as may conscientiously be done, officials are reluctant to make any statement which might lead to the separation from the service of those who have given the best years of their lives to the Government and who, if deprived of their income, would face poverty and want.

In both governmental and commercial centers retirement on some system of pensions for superannuated employees is becoming more generally recognized as both a practical and profitable movement. That such a policy can be carried out by the Government so as to be ultimately a means of economy seems to have been demonstrated. A system of retirement has been adopted by the leading Governments of Europe, and its growth among business corporations indicates the value of the results accruing from the policy. It is found to effect not only immediate relief, but its benefits are seen in its influence on the younger and more active class of employees. It removes much of the incentive to seek other employment where the prospects are brighter; it induces many to render more nearly the maximum of service; and improves the esprit de corps when it is known that the faithful employees may expect to be cared for after they have become incapacitated in the service.

The act of January 16, 1883, to regulate and improve the civil service of the United States provided, among other things, for the classification of all the offices, places, and employments to which it was applicable, for open competitive examinations, selection and appointment according to grade from the persons

graded highest, and the apportionment of appointments in the departments at Washington among the several States and Territories and the District of Columbia, upon the basis of population as ascertained at the last preceding census. The intent of the framers of the act to insure an efficient administration of the affairs of the Government would seem to be shown in the declaration that appointments shall be apportioned as nearly as the conditions of good administration will warrant. In order to insure efficient administration, it is essential that nominating officers have before them at the time of making selection for appointment the names of well-qualified eligibles. The efficiency of the personnel is an important factor in an economical administration of public affairs, and it is not believed that the theory of a geographical division of appointments should be carried out to such a degree as to preserve an ideal the efficacy of which has long been questioned.

It is perhaps unfortunate from an administrative point of view that the interpretation placed at one time upon the law of apportionment has been such that in some cases it has been necessary to select for appointment eligibles with comparatively low ratings when there were on the register the names of persons with higher ratings who, under the apportionment law and rule, were not considered as available for certification. The exhaustive investigation in 1913 of the Civil Service Commission's methods of preserving an apportionment of appointments, made by the President's Commission on Economy and Efficiency, showed that a rigid division of appointments among the several States and Territories, according to population, was not in the interests of the service, and this commission recommended a plan of apportionment whereby the ratings of the eligibles as well as the condition of the apportionment would determine the question of priority of certification for appointment. A modification of the principle previously in force had already been adopted by the Civil Service Commission for certain positions of a scientific and technical nature and this was afterwards extended, probably as the result of the report of the President's commission, to other positions, although not to the extent recommended. The change seems to have worked an improvement in the personnel of the service.

On December 5, 1913, the Department issued a circular relating to the forms of political activity forbidden by the civil-service law and rules, and the illegal collection or payment of political assess-

ments. The circular was based upon the prohibition contained in civil-service Rule I, section 1, which reads as follows:

No person in the executive civil service shall use his official authority or influence for the purpose of interfering with an election or affecting the results thereof. Persons who by the provisions of these rules are in the competitive classified service, while retaining the right to vote as they please and to express privately their opinions on all political subjects, shall take no active part in political management or in political campaigns.

The application of this rule, particularly its application to the forms of political activity which are forbidden, were carefully explained, and reference was made to the sections of the Criminal Code prohibiting a Federal officer or employee from being concerned in soliciting or receiving a political assessment, subscription, or contribution from any other Federal officer or employee. It has been the wish of the Department to apply the rule and statutes referred to, and a copy of the circular is furnished to each employee at the time of his appointment. Three complaints of alleged political activity were filed against employees of the Department during the year. Upon investigation the complaints were not sustained.

Printing and Binding.

The publications of the Department have a wide range and include subjects within the fields of science, industry, shipping, trade, business management, finance, and statistics, but all clearly classifiable under the general head of commerce.

In the bill to revise the laws relating to public printing and binding, now before Congress, it is proposed to establish in each executive department and independent Government establishment a division of publications, with duties identical with those which at the organization of this Department were assigned to and have ever since been performed by its Division of Publications. This proposed action by Congress may reasonably be construed as expert testimony to the wisdom displayed by the Department of Commerce in its formative period in establishing such an office under the immediate head of the Department, and giving this office control over its publication work and over all expenditures for the same, thus insuring uniformity in the typographical form and style of its publications and economy in the expenditure of the Department's annual allotment for printing and binding. Briefly, the Division of Publications is charged with the conduct of the business which the Department transacts with the Gov-

ernment Printing Office, and with general supervision over all printing for the Department, including editing and preparing copy, illustrating and binding, and keeping records of expenditures. It has in charge the distribution of publications, the maintenance of mailing lists, the advertising done by the Department, and the correspondence which these duties entail.

The allotment to the Department for printing and binding during the fiscal year 1914 was \$525,000. Of this sum \$84,000 was on June 30, 1913, transferred to the Department of Labor, in accordance with the requirements of the act approved May 1, 1913. There remained, therefore, a balance of \$441,000 available for the Department of Commerce, of which \$410,700.77 was expended, leaving an unused balance on June 30 of \$30,299.23.

The increase in expenditures in 1914 over those in 1913 was \$80,725.85, or 24.46 per cent. Expenditures in 1914, however, include \$110,758.32 expended for the Bureau of the Census, while there was expended for that Bureau during the preceding year only \$38,270.24, other expenditures in 1913 being from appropriations for the Thirteenth Decennial Census. Excluding figures for the Bureau of the Census in both years, the increase in expenditures was but \$8,237.77, or 2.82 per cent.

The estimated cost of unbilled and uncompleted work of the Department at the Government Printing Office on July 1, 1914, was \$42,953.41, while the actual cost of such work at that office on the same date in 1913 was \$36,686.50.

During the year the Department issued on the Public Printer 3,084 requisitions for printing and binding, as compared with 2,735 in 1913, an increase of 349. Of the requisitions issued in 1914 there remained at the close of business on June 30, 1914, 355 upon which deliveries of completed work had not been made, compared with 344 on the same date in 1913.

The following table shows the cost of printing and binding for each of the bureaus, offices, and services of the Department during the fiscal years 1913 and 1914, together with the increase or decrease for each bureau, office, and service and the estimated cost of the work on hand but not completed June 30, 1914:

Bureau, office, or service.	Cost of work delivered.		Increase (+) or decrease (-).		Estimated cost of work not completed June 30, 1914.
	1913	1914	Cost.	Per cent.	
Office of the Secretary	\$19,408.28	\$12,655.94	— \$6,752.34	— 34.79	\$828.45
Appointment Division	396.05	383.58	— 12.47	— 3.15	58.54
Disbursing Office	1,133.42	698.09	— 435.33	— 38.44	.....
Division of Supplies	363.75	505.43	+ 141.68	+ 38.95	6.30
Bureau of the Census	^a 38,270.24	110,758.32	+ 72,488.08	+ 189.41	^a 12,730.72
Coast and Geodetic Survey	26,526.52	28,837.49	+ 2,310.97	+ 8.71	3,783.51
Bureau of Corporations	11,524.50	10,468.46	— 1,056.04	— 9.16	3,155.75
Bureau of Fisheries	12,897.91	12,687.49	— 210.42	— 1.63	2,346.99
Bureau of Foreign and Domestic Commerce	142,818.07	132,039.95	— 10,778.12	— 7.55	5,948.76
Bureau of Lighthouses	20,219.62	25,560.31	+ 5,340.69	+ 26.41	2,990.51
Lighthouse Service	6,716.44	7,298.93	+ 582.49	+ 8.67	733.25
Bureau of Navigation	^a 12,130.37	12,473.34	+ 342.97	+ 2.83	113.97
Shipping Service	2,032.81	2,646.77	+ 613.96	+ 30.20	393.34
Radio Service	1,102.21	893.83	— 208.38	— 18.91	76.07
Bureau of Standards	18,278.49	28,033.31	+ 9,754.82	+ 53.37	3,973.54
Office Supervising Inspector General,					
Steamboat-Inspection Service	2,456.71	2,637.22	+ 180.51	+ 7.35	10.58
Steamboat-Inspection Service	6,767.34	8,768.90	+ 2,001.56	+ 29.58	3,582.05
Customs Service	6,932.19	13,353.41	+ 6,421.22	+ 92.63	2,221.08
Total	^a 329,974.92	410,700.77	+ 80,725.85	+ 24.46	42,953.41

^a In 1913 the allotment to the Department for printing and binding was reimbursed from other appropriations for the following expenditures: For the Radio Service, \$1,716.58; for the Bureau of the Census for printing in connection with publishing statistics relating to cotton and tobacco), \$5,011.48; total, \$6,728.06.

It is worthy of note that though the work of the Department has expanded in recent years its expenditures for printing and binding have remained practically stationary. This is evidenced by the following statement, which shows for each of the fiscal years 1907 to 1914 the amount available to the Department for printing and binding, the amount expended, the unused balance on June 30, and the cost of work not completed at the close of the year. Figures prior to 1913 include expenditures for bureaus and services transferred to the Department of Labor by the act of March 4, 1913, but do not include those for the Bureau of the Census, which was provided for by separate allotments or appropriations.

Fiscal year.	Allotment.	Expenditures.	Unused balance.	Cost of work not completed June 30.
1907.....	\$375,000.00	\$332,185.05	\$42,814.95	\$34,749.24
1908.....	375,000.00	342,962.36	32,037.64	47,055.59
1909.....	375,000.00	374,939.91	60.09	29,139.26
1910.....	^a 376,337.43	^a 361,530.43	14,807.00	42,535.93
1911.....	^b 381,500.00	^b 375,575.02	5,924.98	46,173.12
1912.....	375,000.00	374,995.64	4.36	43,956.76
1913.....	^c 329,978.06	^c 329,974.92	3.14	36,686.50
1914.....	441,000.00	410,700.77	30,299.23	^d 42,953.41

^a Includes \$1,337.43 expended for supplies furnished the Bureau of the Census, for which the Department's allotment was reimbursed.

^b Includes a special appropriation of \$6,500 for the printing of the World Trade Directory. The entire sum was expended for the publication.

^c Includes \$6,728.06 for printing done for the Bureau of the Census (publishing statistics relating to cotton and tobacco) and the Bureau of Navigation (Radio Service), for which the Department's allotment was reimbursed.

^d Estimated.

The following statement shows the amount and cost of each class of work called for by requisitions on the Public Printer during the fiscal year 1914, and affords a comparison with the amount and cost of these classes during the preceding fiscal year:

Class.	1913	1914	Increase (+) or decrease (-).	
	Number.	Number.	Number.	Per cent.
Blank forms.....	8,409,705	14,301,618	+ 5,891,913	+ 70.06
Reports, pamphlets, etc.....	7,287,545	7,634,930	+ 347,385	+ 4.77
Letterheads.....	1,171,500	1,789,000	+ 617,500	+ 52.71
Envelopes.....	35,045	347,250	+ 312,205	+ 890.87
Circulars, notices, and summaries.....	155,150	729,875	+ 574,725	+ 370.43
Index cards.....	553,700	1,620,200	+ 1,066,500	+ 192.61
Guide cards and folders.....	145,650	152,700	+ 7,050	+ 4.84
Memorandum sheets.....	4,686,000	1,525,000	- 3,161,000	- 67.46
Blank books.....	27,735	13,355	- 14,380	- 51.85
Miscellaneous books (binding).....	2,575	4,530	+ 1,955	+ 75.92
	Cost.	Cost.	Cost	Per cent.
Blank forms.....	\$12,954.51	\$45,226.19	+ \$32,271.68	+ 37.24
Reports, pamphlets, etc.....	274,562.23	338,247.73	+ 63,685.50	+ 23.20
Letterheads.....	1,512.23	2,962.95	+ 1,450.72	+ 95.93
Envelopes.....	159.32	311.61	+ 152.29	+ 95.59
Circulars, notices, and summaries.....	754.71	3,594.09	+ 2,839.38	+ 376.22
Index cards.....	685.50	1,339.47	+ 653.97	+ 95.40
Guide cards and folders.....	782.91	740.27	- 42.64	- 5.45
Memorandum sheets.....	2,334.28	1,214.55	- 1,119.73	- 47.97
Blank books.....	10,549.95	10,591.99	+ 42.04	+ .40
Miscellaneous books (binding).....	4,169.86	5,890.27	+ 1,720.41	+ 41.26
Miscellaneous.....	1,509.42	581.65	- 927.77	- 61.47
Total.....	329,974.92	410,700.77	+ 80,725.85	+ 24.46

During the fiscal year 1914 the Department issued 1,054 publications, compared with 843 for the same bureaus and offices in the fiscal year 1913, of which 53, against 23 in 1913, were printed in two or more editions during the year, while 110, compared with 73 last year, were reprints, without change, of issues of earlier years. The publications issued in 1914 contained a total of 54,768 printed pages, compared with 41,507 in 1913, and there were printed of them for the Department a grand total of 8,586,605 copies, against 7,286,930 in the preceding year, an increase of 1,299,675 copies.

The publication work of each bureau of the Department for the past two fiscal years is summarized in the following table:

Bureau.	Publications.		Pages.		Copies printed for Department.		Cost.	
	1913	1914	1913	1914	1913	1914	1913	1914
Office of the Secretary.....	50	56	2,560	2,090	92,850	197,050	\$8,040.47	\$6,435.73
Bureau of the Census.....	30	198	2,247	12,976	191,700	1,056,950	48,766.20	98,306.41
Coast and Geodetic Survey...	25	25	2,070	4,674	31,500	55,125	16,561.04	32,782.08
Bureau of Corporations.....	19	15	3,954	3,136	33,225	16,990	14,553.78	3,672.45
Bureau of Fisheries.....	49	53	2,516	2,516	44,225	90,100	12,494.91	10,456.77
Bureau of Foreign and Domestic Commerce.....	428	425	16,343	16,220	6,264,435	6,242,470	135,270.79	121,820.68
Bureau of Lighthouses.....	105	108	3,147	3,432	256,695	279,020	22,087.51	25,791.17
Bureau of Navigation.....	16	19	2,239	2,036	74,600	42,100	10,998.50	11,817.41
Bureau of Standards.....	108	145	5,272	6,895	86,700	129,300	12,857.91	19,553.30
Steamboat-Inspection Service.....	13	10	1,159	793	211,000	477,500	6,511.71	7,295.61
Total.....	843	1,054	41,507	54,768	7,286,930	8,586,605	288,142.82	337,971.60

^a Figures relate to publications actually becoming available during the year for distribution; consequently they do not agree with similar figures in a preceding table giving the cost of work done by the Government Printing Office during the fiscal year. Frequently the cost of a publication is charged against allotments for two or more fiscal years.

During the year 7,035,029 publications and printed circulars of the Department were distributed to the public, as compared with a total of 7,107,199 during the fiscal year 1913, a decrease of 72,170. This decrease was due to two causes—(1) revisions of mailing lists, which resulted in the removal of a large number of names, and (2) an extension of the Department's policy to curtail the promiscuous free distribution of its publications. Of the total number of publications and circulars distributed, 6,803,123 were wrapped and mailed by the office of the Superintendent of Documents and 231,906 by the Division of Publications. Those wrapped and mailed by the Superintendent of Documents com-

prised a mailing list distribution of 6,507,834 and a distribution in response to individual requests of 295,289.

During the year the Department received and acted on 85,170 miscellaneous requests, calling for 484,331 copies of publications. This was an average of 278 requests and nearly 1,600 publications for each working day.

The number of publications of the Department in stock and available for distribution to the public on July 1, 1913, was 340,005, to which were added during the year 7,037,764, making a total of 7,377,769. Of this total, 7,035,029 were distributed during the year, leaving 342,740 on hand at the close of business June 30, 1914.

In consonance with the policy of the Department to place its publications on a sales basis, so far as practicable, and to limit free distribution to well-defined public or quasi-public classes, the free distribution of practically all publications of the Bureau of Foreign and Domestic Commerce is now confined to libraries, educational institutions, the press, and commercial or other organizations. Editions of the Bureau's publications have been reduced, and individuals requesting copies are referred to the Superintendent of Documents, who maintains an ample stock for sale at nominal prices based on the cost of printing from stereotype plates. Publications of the Bureau which are sold either on a subscription basis or at a flat rate include the Daily Consular and Trade Reports, Monthly Summary of the Foreign Commerce of the United States, Quarterly Statement of Imported Merchandise Entered for Consumption, Statistical Abstract of the United States, annual report on the Foreign Commerce and Navigation of the United States, Commercial Relations of the United States with Foreign Countries, reports of special agents sent abroad to investigate trade conditions with respect to selected industries, and special reports of consular officers on assigned subjects.

The Bulletin of the Bureau of Standards (issued four times a year) is also now sold by the Superintendent of Documents at 25 cents per number, or \$1 for the four numbers constituting a volume, all back numbers of the Bulletin being available. The Department edition has been reduced from 2,500 to 1,500 copies.

It is believed that the present free distribution of large and expensive editions of the light lists and buoy books of the Bureau of Lighthouses could also be curtailed without detriment to the interests served. Other governments put a price on similar pub-

lications issued by them. There is, however, some question as to a practical plan for the distribution. Tide Tables, Coast Pilots, and Charts, which have for many years been issued and sold by the Coast and Geodetic Survey, may be conveniently purchased by mariners at agencies established at all important ports on the seacoast and the Great Lakes. The publications of the Bureau of Lighthouses should, of course, be procurable with equal facility, but it is doubtful if the Superintendent of Documents at present has authority for establishing the necessary number of agencies and supplying them with stock. Some specific legislation may therefore be necessary before the sales plan may be adopted for these publications.

The results have been so gratifying that further gradual extensions of the sales plan are in contemplation, as it is believed to furnish the most equitable and economical distribution of the Department's many publications. Experience has demonstrated that persons are willing to pay the merely nominal prices placed on the publications by the Superintendent of Documents, and when distributed under this plan the Department has a reliable method for judging the public demand for its publications and knows that they are reaching persons who have a real interest in them.

Sales by the Superintendent of Documents during each of the past five years of publications issued by the Department are summarized in the following statement, giving the total number of copies of publications sold and the total receipts from such sales. The number of copies shown in the table does not in any case include distribution of publications to regular subscribers.

Fiscal year.	Copies.	Receipts.
1910.....	7, 114	\$1,486.05
1911.....	9,395	^a 14,988.95
1912.....	^b 30,775	^c 8,712.94
1913.....	11,248	^d 6,271.75
1914.....	^e 43,226	^f 13,793.35

^a Includes \$27.10 received for subscriptions and \$13,255 from sales of the 1911 World Trade Directory.

^b Includes 17,150 copies of 2 publications sold at a nominal price for redistribution.

^c Includes \$2,749.75 received for subscriptions and \$2,450 from sales of the 1911 World Trade Directory.

^d Includes \$1,958.55 received for subscriptions and \$1,090 from sales of the 1911 World Trade Directory.

^e About 13,000 of this number represents a distribution, at a nominal sales price, of economic circulars of the Bureau of Fisheries.

^f Includes \$4,029.25 received for subscriptions.

Work of the Solicitor's Office.

During the fiscal year ended June 30, 1914, 138 contracts totaling \$828,890, together with 8 contracts of indeterminate amount, 28 leases amounting to \$274,614, 13 revocable licenses amounting to \$978, insurance policies in the sum of \$164,400, deeds involving payments of \$3,986, and 169 bonds amounting to \$436,539 were examined (approved, disapproved, drafted, redrafted, modified).

The number of legal opinions rendered, formal and informal (memorandum), totaled 287.

In addition to this, 490 miscellaneous matters, embracing everything submitted for the advice or suggestion of the Solicitor, or for the formulation of departmental action, not included in the foregoing items, were handled by this office.

BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

This important Bureau, which is the spearhead of the Department's active commercial work, is for the first time in the possession of an organization adequate for its purposes. It works abroad through a threefold force, viz, the commercial attachés, the Consular Service, and the commercial agents.

Commercial Attachés.

The requirement for commercial attachés was fully explained in my report for the fiscal year ended June 30, 1913 (pp. 60-62). Congress having provided an appropriation of \$100,000 to establish this force, the subject was taken up soon after the close of the fiscal year with the Civil Service Commission, which cooperated in preparing blanks for the examination required by law and kindly arranged to have the written examination take place at its offices in 12 cities. A committee of officers from both the State Department and the Department of Commerce was formed to conduct an oral examination in the case of such applicants as passed the written one, and carefully revised ratings were made based upon the actual results of these examinations. It was arranged and announced that the experience of officers in the service of the Department of State and the Department of Commerce in actual commercial promotive work should be accepted in lieu of a portion of the examination, and it was provided by Executive order that consuls who might be promoted to the attaché service should not thereby lose their standing in the

Consular Service. As a result of the examinations the following appointments have been made since the close of the fiscal year at the salaries stated:

- A. H. Baldwin, commercial attaché at London, England, \$5,000.
- Erwin W. Thompson, commercial attaché at Berlin, Germany, \$5,000.
- C. W. A. Veditz, commercial attaché at Paris, France, \$5,000.
- Henry D. Baker, commercial attaché at Petrograd, Russia, \$5,000.
- Albert Hale, commercial attaché at Buenos Aires, Argentina, \$4,500.
- Julean H. Arnold, commercial attaché at Peking, China, \$4,500.
- Lincoln Hutchinson, commercial attaché at Rio de Janeiro, Brazil, \$4,500.
- A. I. Harrington, commercial attaché at Lima, Peru, \$4,000.
- *V. L. Havens, commercial attaché at Santiago, Chile, \$4,000.

All of the above appointees successfully passed both the written and oral examinations, save those who were promoted from the Government service after a careful review of their experience in the kind of work the attaché will be required to do. Appointments of this kind were made in the case of Mr. Baldwin at London, Mr. Arnold at Peking, and Mr. Baker at Petrograd.

It is expected that all of these attachés will be at their posts by the time this report is printed. It is probable that the attachés at Berlin and Paris will be temporarily engaged in important work, collateral to their regular duties, in countries adjoining those to which they are assigned pending a further determination of the existing conditions in central Europe.

The cooperation of the Consular Service in our commercial work is a striking example of how broad-spirited cooperation between two departments can foster the public good. Too much can not be said in praise of the considerate and helpful spirit shown by the Secretary of State and all his subordinates in helping forward through an assistance both generous and skillful the important work this Bureau is called upon to do. The work of the Consular Service was never so well done as to-day, and it constantly improves. It is the effort of this Department to supplement the intelligent activity of our consuls with an equally intelligent use of the mass of valuable material which their labors place at our disposal.

The commercial agent is the traveling man of the Department. He takes a single subject or a group of subjects and goes from country to country in his study of them, submitting reports upon the one general theme from the point of view of many nations and of diverse markets.

The force thus briefly described may also be characterized—
The permanent officer with the general outlook—the attaché.

The permanent officer with the local outlook—the consul.

The traveling officer with a single subject—the commercial agent.

It is not meant in any way to exclude from kindly thought the important work of the consuls general. Rather, it is the spirit of this Department to cooperate with them in hearty appreciation of the important services they render. Our force in the foreign field is instructed that they are not rivals of our other national officers there, but helpers to them; that they are all engaged in the one common work of pushing American commerce, and that only the spirit of broad helpfulness by each to the other and by all for the common good will be tolerated.

Commercial Agents.

In the month of October, 1914, there were in service, or about to start to their respective fields, the following commercial agents:

- H. N. Douthitt, electrical and general machinery supplies, South America.
- Charles Ferguson, commercial investigations in the United States.
- William A. Reid, special services in developing export trade, United States.
- F. H. Smith, markets for lumber in the Orient.
- S. S. Brill, markets for hardware in South America.
- L. L. Bucklew, furniture trade in South America.
- Garrard Harris, general commercial studies in Latin-American countries.
- Benjamin Joachim, clothing trade in Latin-American countries.
- Roger E. Simmons, lumber industry in South America.
- Ralph M. Odell, cotton textiles investigation in the Orient.
- J. A. Massel, general machinery, including machine tools, in South America.
- L. B. Hoit, general trade conditions in Mexico.

There is pending the appointment of another commercial agent to inquire into markets abroad for American fruits and still another to inquire into markets for general merchandise in Central America, Venezuela, and Colombia.

During the fiscal year commercial agents were engaged on investigations as follows:

- E. N. Hurley, banking and credits in South America.
- J. Alexis Shriver, canned goods in foreign countries.
- Frank G. Bolles, coke-oven by-products and electric furnaces.
- A. J. Wolfe, commercial laws in foreign countries.
- W. A. Graham Clark, cotton textiles in Japan and Manchuria.
- Ralph M. Odell, cotton textile trade and industry in China, India, and Australasia.
- Henry D. Baker, commercial conditions in India.
- E. W. Thompson, oil-seed products investigation.
- E. A. Thayer, proprietary medicines, drugs, and canned goods.
- D. C. Alexander, machinery trade in the Far East.
- F. J. Sheridan, Grosvenor M. Jones, C. D. Snow, and C. W. A. Veditz, pottery investigation (cost of production).

Since the close of the fiscal year Dr. Edward Ewing Pratt has been appointed Chief of the Bureau and Mr. E. A. Brand and Dr. Frank R. Rutter have been appointed Assistant Chiefs.

Branch Offices.

The provision by Congress of a special fund for promoting commerce in Latin America, in addition to the general fund for promoting commerce, has not only permitted the selection of an active staff of trained students of commerce and industry but has also permitted another marked forward step in the organization of the Bureau for efficient work. It is all very well to have a good force in the foreign field, but if proper means do not exist to put the work of this force into touch with American commerce and industry the effort is largely wasted. Washington is not a commercial and industrial city, and it is difficult by mail or by publication to reach as intimately and effectively as is necessary the industrial and commercial pulse of the country. Therefore, during the fiscal year, in an experimental way, an office was opened in New York to see whether a closer touch could thus be had with the business world and whether the new service would be used and appreciated. The success of that office led to the opening of others in Chicago, San Francisco, and New Orleans, and shortly after these there followed additional offices in Boston, Atlanta, and Seattle. An eighth office has only recently been established in the city of St. Louis, and other large cities are applicants.

This movement has been embarrassingly successful, for the appreciation of the mercantile world of this outward movement into their midst has been such as not only to lead to the calling for other offices beyond our power to supply them but to impose upon those offices which exist a burden of helpful work which they desire indeed to do but for which their means are quite inadequate.

To these offices are sent the consuls who come from abroad. The commercial attachés go thither before leaving for their posts or upon their return. The commercial agents make them their headquarters for bringing their work into touch with the local business community. Instead, therefore, of one center in Washington, from which substantially all contact with the business world was had by mail, there are now nine offices, including the central one, in eight of which contact with the business community is had personally and hourly.

By this means the Consular Service is made a live factor to business men, and both the consul and the merchant are the gain-

ers thereby. The commercial agent on returning from abroad with a mass of accumulated information does not deposit it in a bureau to be hidden with other accumulations of like knowledge, but takes it out to the men who need it in the centers in which they conduct their affairs.

One further step is taken as this report goes to press. A traveling representative of the Bureau is put in the domestic field who will go from city to city conferring with merchants and manufacturers, informing them of the work of the Bureau, learning from them how its services to American commerce can be improved, instructing them how to avail themselves of it, and thus representing directly and personally the Bureau in its effort to extend our commercial prosperity.

To the above must be added the numerous publications and special communications which the Bureau sends out, a work which is of a very diverse and extensive character and which is rapidly extending.

The services thus rendered to commerce are of a directly practical nature. Were this doubted, it would be easy to show to the skeptical records of actual orders obtained through the Bureau's action in making foreign conditions known to the domestic producer.

Under the new organization, completed but not yet fully in service, the Bureau anticipates a large development of its work for fostering our trade.

In Washington the facilities for digesting and distributing commercial information of every class are fully organized, practical methods are used, and excellent index systems, classified lists of business firms, numerous forms of publicity, a trained corps of editors, translators, statistical clerks, and tariff experts, are combined to render effective the useful trade facts collected for the commercial public.

For the details of the work of this office, reference is made to the annual report of the Chief of the Bureau. Practically all its branches show a development during the year. Its publications have been more numerous and have been widely circulated. These bulletins are now sold, free distribution being limited to those agencies (such as chambers of commerce and other commercial organizations, libraries, and trade papers) which materially further the publicity desired for trade information.

The statistical service has been much modified, with the purpose of emphasizing the promotive value of the important

records of import and export commerce. The record of existing foreign tariffs has been currently maintained. The commercial agents of the Bureau have not only made many very practical reports of markets for cotton textiles, canned goods, drugs and proprietary medicines, by-products of coke ovens, banking and credits in South America, etc., but they have visited trade centers throughout the United States and by personal interviews and public addresses have much enhanced the effect of their work. It is regretted that a recent law hampers this most useful service by forbidding the attendance of Federal employees at trade conventions except at their own expense. It surely was not the intention that the law should prohibit the commercial representatives of the country from making known directly to business organizations the information which they have traveled far and labored hard to get, yet this is the effect of the restriction embodied in the law.

Cost of Production.

The important work which Congress assigned to the Bureau in collecting costs of production of articles subject to import duty has been actively carried on in two branches of industry. A survey of the earthenware pottery industry in the United States and Europe has just been completed, and most practical and valuable results have been obtained. Over 90 per cent of the American potteries were investigated, and no more complete study of an industry, it is believed, was ever made. A similar study of the great clothing industry is now in progress. The committees of Congress will find in such reports the essential facts in regard to an industry necessary to intelligent legislation on tariff matters. Such facts have heretofore usually been available not from a disinterested governmental source but from those whose interest might lie either in increasing or lowering tariff rates. The value of such detached and disinterested investigations of our industries is no longer in question, and this service is not alone useful in relation to tariff legislation but is undoubtedly of very marked promotive value to any industry that may be studied by competent agents.

Statistics.

Much constructive work still remains to be done, based on the broad foundation of plan and policy which has been established in the various branches of this service. The statistics of our commerce, for example, are now collected systematically by this Department only in regard to the trade that passes through our coast and border ports. This constitutes only 5 to 6 per cent of

our commerce. The vast movements of trade within our boundaries are not recorded by this office. This is a serious defect in our system of collecting useful trade facts, and should be corrected. Provision should be made as soon as practicable for a suitable appropriation to establish the facilities for collecting and publishing these statistics of internal commerce. The branch offices of the Bureau furnish admirable organization units for beginning this work, and its value would be made clear at once to Congress and the public.

A general study of the methods of collecting, compiling, and publishing trade statistics is now in progress and will have an important bearing on the development of this branch of the promotive work of the Bureau. The Bureau has long been satisfied that the statistics of our import and export commerce, particularly of the latter, are inaccurate. They are collected under a law passed in 1820, when much, if not most, of that which constitutes modern commerce had no existence and when our relation to the world was radically unlike its present one. It is believed that the statistics of our export trade are incorrect to an extent sufficient to alter at times a trade balance on mercantile transactions which is actually in our favor into one which appears to be the reverse.

The subject having been brought to the attention of the Secretary of the Treasury, he has kindly consented that an officer of this Bureau may be placed in the New York customhouse with a view to examining, and by cooperation correcting, the methods of collecting export statistics, so that the existing inaccuracies may be removed so far as it is possible to do so without legislation. With this in view, Dr. Frank R. Rutter, Assistant Chief of the Bureau, will be sent to the New York customhouse on this important service.

It is important that export associations and trade councils dealing with foreign business should exert their utmost influence to have our export statistics accurate. In a business as large as our export trade now is, an average error of 10 per cent in the valuation of our exports might well mean a difference of two hundred millions in the apparent value of the country's sales abroad, and such a sum might well turn and in certain years would have turned a balance seemingly against us on such transactions into one which really was in our favor. This would have a direct effect upon mercantile, industrial, and financial thought and

action, now, it is to be feared, somewhat inaccurately informed upon this important subject.

For the coming year it is essential that the present useful activities of this office be vigorously maintained, and that such additional funds be provided as may be needed to care for the increase in the demands upon the Bureau, an increase which has been very marked during the past year and will no doubt continue.

The special fund for promoting commerce in Central and South America, of which 80 per cent is allotted to field investigations and the remainder used in Washington, should be continued and supplemented, as a permanent occupation of Latin-American markets is the only wise policy for our Government to support. The appropriation for commercial attachés should in time be increased to permit the dispatch of our trade representatives to the posts not now established which were recommended last year. The branches of the Bureau in the United States have so completely justified their existence by useful and practical service to business firms that other cities should receive the aid now given in New York, Chicago, San Francisco, Seattle, New Orleans, Atlanta, Boston, and St. Louis.

The studies of costs of production in pottery manufacture and the clothing industry have also proven their worth, and should be carried into other industries. Fortunately, the work of this Bureau so clearly pays for itself in increased commerce and in aid to business that I feel that liberal support for its activities constitutes real economy in the expenditure of the Nation's funds.

BUREAU OF CORPORATIONS.

MERGER OF BUREAU IN FEDERAL TRADE COMMISSION.

According to an act of Congress of September 26, 1914, providing for a Federal Trade Commission, the Bureau of Corporations will be merged in the said commission immediately upon its organization. This act provides that the Bureau of Corporations shall then cease to exist, and that its employees shall become employees of the commission, and that the commission shall take over all the records, furniture, and equipment of the Bureau, and the conduct of all work and proceedings in which it shall then be engaged, while all appropriations made for the support and maintenance of the Bureau and its work are continued and authorized to be expended by the commission.

In consequence of the merger of the Bureau of Corporations in the Federal Trade Commission thus provided by law, and the fact that the direction of the present work of the Bureau will be intrusted to the commission, which is made independent of this Department, the usual statement with respect to policies and plans for the future have necessarily no place in this report.

The present report covers primarily the work of the Bureau of Corporations for the fiscal year ended June 30, 1914, but in view of the impending merger of the Bureau in the Federal Trade Commission, and of the fact that at the close of the next fiscal year the Bureau will no longer be within the jurisdiction of this Department, a statement is made also concerning the work of the Bureau subsequent to the said fiscal year, which brings the account of its activities practically down to the time of its severance from this Department, thus avoiding the necessity of referring to it in detail in subsequent annual reports of the Secretary of Commerce.

WORK OF THE YEAR.

The work of the Bureau of Corporations for the fiscal year was largely influenced by two circumstances. First, certain investigations commenced prior to the fiscal year, and in most cases during preceding administrations, were uncompleted and necessarily demanded first attention. Second, about the middle of the fiscal year definite steps were taken by the legislative branch of the Government to establish a Federal Trade Commission and to merge the Bureau of Corporations therein, as stated above, and to enact supplementary antitrust legislation. This situation made it seem expedient for the Bureau to devote a considerable part of its attention to the study of economic and legal problems connected with the proposed legislation, and to the arrangement of its plans so as to be of greatest service to the proposed Trade Commission, if established.

Work Pending at the Beginning of the Year.

Several investigations commenced by the Bureau in prior years remained uncompleted at the beginning of the fiscal year covered by this report, namely, lumber, tobacco, agricultural implements, State corporation taxation, fertilizer, and petroleum. Work on all except the last two was initiated before the present administration.

Substantial progress was made in all of these investigations, and, except for State taxation of corporations and the last two investigations just mentioned, they were nearly completed during the

fiscal year under consideration. A more definite statement of the matters reported on by the Bureau during the fiscal year is given below.

New Work Undertaken.

Apart from a general investigation of certain legal and economic problems relating to proposed legislation, referred to above, which included a study of foreign legislation on trusts, etc., certain new investigations were initiated by the Bureau during the fiscal year.

Among the most important of these was an investigation into the economic character and effects of the system of resale price maintenance, i. e., the practice of manufacturers and distributors of fixing the price at which retailers or other dealers in their products shall sell to consumers or other purchasers.

A study was also commenced of the conflict of State laws relating to foreign corporations. The wide divergences in the prerequisites for doing business in the various States have often seriously hampered and restricted the business world. A comparative study of this subject and the preparation and suggestion of a model system of regulation, it is thought, would tend to facilitate the establishment of a more uniform system which would be of great benefit to the business world and the public at large.

An investigation of the lumber and shingle industry in the State of Washington with regard to the general economic conditions was initiated and completed.

A similar but more elaborate investigation was initiated into the general economic conditions in the beet-sugar industry.

In accordance with a resolution passed on March 28, 1914, by the United States Senate, an investigation was commenced with respect to alleged discrimination in the prices paid for crude petroleum in the Healdton or Ardmore field of Oklahoma. This investigation was necessarily connected, to a large extent, with the one initiated just before the beginning of the fiscal year into the petroleum industry with respect to the prices paid for Oklahoma crude oil.

The Bureau also had in contemplation a comprehensive study of the fundamental problems of the efficiency of trusts; that is to say, of the determination of the question whether, from the standpoint of business profits, and also from other standpoints of social welfare, the trust form of organization was really, as is often alleged, socially and economically efficient. While some tentative work was done by the Bureau in this connection during the fiscal year,

the lack of an adequate appropriation made it impracticable to organize a comprehensive investigation of this very large subject. Nevertheless, a fairly comprehensive survey of the industrial field has been made, which will furnish a basis for this work if the appropriation is provided therefor.

Work Completed.

With respect to the investigations commenced during previous administrations, practically all data necessary for the final reports were collected and digested before the end of the fiscal year, although the final reports thereon have not in all cases been completed at the present date.

During the fiscal year a special report on taxation was issued, supplementing previous reports on State taxation of corporations and covering the taxation movement throughout the United States during 1912. Subsequent to the close of the fiscal year, namely, on September 8, another report on taxation was issued covering the systems of corporate taxation in the Mountain and Pacific Coast States.

A report was issued during the fiscal year in connection with the lumber investigation regarding conditions of production, wholesale distribution, and prices of lumber. The results of the investigation into the shingle and lumber industry in the State of Washington were also reported on. Subsequent to the fiscal year further reports in connection with the lumber industry were issued relating to the concentration of the ownership of the timber resources of the country in particular localities and the concentration of land ownership among large timber owners.

The work of the Bureau has been so planned as to complete a large part of the investigations now on hand before its merger into the Federal Trade Commission by the publication of additional reports on tobacco, lumber, farm implements, taxation of corporations, petroleum (Healdton oil field), conflict of State foreign-corporation laws, and trust legislation.

The work of the Bureau during the fiscal year was by no means wholly confined to investigations which are the subject matter of the Bureau's reports. Not only was considerable assistance given to other branches of the Government service, through details of members of the Bureau's staff, but also extensive work was done of a statistical, economic, and legal character, with a view to aiding Congress, particularly in connection with tariff and trust legislation.

BUREAU OF STANDARDS.

Functions.

While the work of the Bureau of Standards covers a wide range of scientific work in physics, chemistry, and engineering, touching on the one hand the interests of the individual consumer and on the other those of the manufacturer, and enters directly into technical practice and into legislation, the work is primarily the development of standards. Standardization involves standards of measurement, standard values of technical constants, standards of quality, and standards of mechanical performance. Their complexity is due to the exacting demands of modern industrial and scientific work. The principle of standardization, which has become so powerful a factor in industry, has itself become the subject of searching analysis.

Standards of measurement are those in terms of which units of measure are defined. They underlie every indication of quantity or dimension, whether of matter, time, space, or energy. Upon such standards rests the availability of technical data for industrial application.

Standard values of constants are those measured data, determined with as high precision as possible, which serve to control industrial process. For example, every engineer must have handbooks giving the data which he uses daily in his work—designing structures, laying out industrial plants, and planning industrial processes. The effectiveness of the work of the engineer and of the industries which he serves is in direct proportion to the correctness of the data available. The determination of such standard data is an important function of the Bureau of Standards.

Standards of quality are quite modern in the scientific sense. Such a standard may be in the form of a sample of an ideal material, but are usually a description of the properties of an ideal material. In the latter form they are given as technical specifications. In proportion as these technical specifications are given in units of weight and measure describing the properties which insure the desired quality, the specification becomes a standard of quality. The establishment of such standards demands the widest range of experience in the testing and use of materials and the most careful experimental investigation of the underlying scientific principles. This is an important function of the Bureau which is coming more and more to be appreciated.

Standards of mechanical performance are those that state the performance desired or guaranteed in terms of units of measure or in measurable terms of performance. In this respect this modern form of standard is perhaps the most complicated of all, since it involves standards of measurement, standard constants, and standards of quality. It is needless to say that only a beginning has been made in this field, but the work gives promise of the most fruitful results.

In a field so broad the Bureau can hope to touch only upon the more important aspects of such work—aspects which can not as efficiently be taken up in private laboratories.

Weights and Measures of Trade.

During the past year the Bureau of Standards has continued its work of stimulating nation-wide interest in honest weights and measures in daily trade. The need for a systematic inspection service for trade measures is obvious. The honest dealer is otherwise at a disadvantage, and the consumer is helpless, since the standards are in the custody of the Government. The Bureau helps in standardizing trade measures through the State and local inspectors, through manufacturers and their output of measuring appliances, and directly for the public upon request. The standardization is not limited to assuring the length of the yard, the weight of a pound, or the capacity of the gallon. The standardization service includes all factors affecting the correctness of measure of the products received by the consumer. The Bureau makes theoretical and experimental study of sources of error in measuring devices, suggests standard methods of measurement, methods of testing measures, standard tolerances, standard containers—all with a view to the best theoretical requirements.

The Bureau is continually rendering such service to all concerned. The Ninth Annual Conference on Weights and Measures at the Bureau last May was especially effective in bringing together the experience and problems of the weights and measures officials from 26 States, as well as of manufacturers and others interested in this subject. The discussions touched upon every phase of trade measures, and a manufacturers' exhibit supplemented the program by affording opportunity to inspect new types of weighing and measuring apparatus.

In this and many other ways the Bureau has exerted a far-reaching effect upon the standard of fair dealing in commerce and trade. The Bureau is now an organized center where anyone

interested in weights and measures may come for such assistance as the Bureau can render, and where anyone may be assured of a fair hearing in case of difficulty. Hence, manufacturers of measuring instruments come for suggestions to improve their product, sealers visit the Bureau to examine its equipment and methods of testing, the public by visits and correspondence submit questions involving fraudulent practices, State legislators and officials request the Bureau's judgment on the technical details of inspection service, and Congress calls upon the Bureau for its opinion on proposed weights and measures legislation.

Two bills affecting the weights and measures of trade are pending before Congress which would tend to improve conditions of such service. These aim to fix the standard barrel for fruit, etc., and to regulate the use of weights and measures. The bills are approved in principle and their enactment into law is desired.

The Bureau is cooperating with the Treasury and Agricultural Departments in the enforcement of the new law requiring the quantity label on package goods. The enactment of this law is one of the recent successes of the movement for honest weights and measures. The law gives the consumer a direct knowledge of the net quantity of product in a large proportion of his purchases. The Bureau experts assisted the board designated in the law, especially with reference to the technical details of measurement and specification of quantity.

Public Utilities.

During the year an appropriation was made by Congress to conduct work in connection with public utilities. With the rapid growth of public-utility regulation by State and municipal commissions, a great number of technical questions have arisen which involve standards of regulation and control. The success of public-utility regulation depends upon the carefulness with which it is based upon ascertained measures and standards.

An ideal regulation would involve standards for many details of the service and include the more complex subjects of quality, efficiency, distribution, process, and control. This is an extension of the idea of units and standards of measurement of the simpler forms.

The work of practically all divisions of the Bureau has been at times called upon to meet the demands for information and advice on these subjects. Engineering investigations have been undertaken in connection with standards for illuminating gas and elec-

tric service, particularly in connection with the mitigation of electrolysis, and with the promotion of safety in electric practice. An interesting point in connection with the gas standards is that at different altitudes different specifications are required to secure the same heating value in a gas, since this depends upon its mass and composition rather than its volume merely.

The Bureau has been requested by State and city governments and public-service commissions to assist in research designed to secure more efficient regulation of particular utilities. It is gratifying that the National Government has available the laboratory facilities for submitting to rigid laboratory experiment the various technical questions connected with this subject.

The Bureau during the year has continued its advanced work and field investigation of the methods of electrolysis mitigation. Its laboratory investigations include the effects of electric current in underground pipes, tests of pipe covering, corrosion of metals in soils, and many other experimental phases. An electrolysis survey was made at Springfield, Mass., as a demonstration of what could be done in securing relief from electrolytic corrosion. The results thus far obtained have been very gratifying.

In connection with electric light and power service, the principal factors to be prescribed are quality and reliability, and the accuracy of meters that measure the current. These may be investigated by experiment and measurement, and the results will be of great value to the public, both the consumer and producer, by making the mutual understanding more definite, thus avoiding suspicion and inefficiency. The Bureau has issued recently a manual of safety rules in connection with life hazard involved in electric current distribution.

The Bureau serves in a cooperative and advisory capacity as to standards involved. In special cases the Bureau experts are asked to visit and study local conditions. The extent to which the regulation of public utilities involve laboratory work, field measurements, and standards is striking. Clear specifications for an efficient service refer in almost every paragraph to units of measure, measuring instruments, or standards. In gas service, for example, the vital factors—quantity, candlepower, pressure, and quality—all are measurable and may be specified in units of measure. Standards may be set for each element so selected as to assure a uniformly efficient service. Each of the units has measured elements. For example, the measurement of candlepower involves

the plan of testing, the unit of candlepower, the effect of atmospheric conditions, the bases of rating, humidity corrections, and correctness for air pressure. All these are measured details affecting the measurement of candlepower.

In the public-utilities work the Bureau has secured the ready cooperation of engineers, inspectors, and local government officials. The Bureau thus has available and is accumulating data and experience. It is enabled to tabulate and study such data and draft model regulations which have passed the critical scrutiny of the Bureau and the best experts in the country. This enables the utilities commissions to begin upon a technically correct basis. The Bureau aims to be in the highest degree helpful to the public, the public-utilities companies themselves, and the public-service commissions which regulate them.

Manufacturers, etc.

Practically every industry has its units, its special methods of measurement and measuring instruments designed for every kind of need. The Bureau aims to critically study the theory of such instruments with a view to pointing out sources of error. It also certifies the corrections to standards by which such instruments are constructed. It is equally necessary for the Bureau to examine the methods by which such measuring instruments are used; and by aiding the manufacturer to secure accurate measuring instruments, and to apply the most precise methods of measurement, the Bureau is aiding industry at fundamental points. Modern industry is effective in proportion as precision methods of measurement are applied to the details of industrial process.

The report of the Bureau for the year shows clearly the intimate connection between standardization and the industries. The engineering professions have appealed to the Bureau to investigate the adequacy of the formulas upon which the strength of columns are computed. At the request of the refrigeration engineers, the Bureau has begun the redetermination of the certain constants upon which their calculations are based; likewise, the fire-prevention interests have united in requesting that the Bureau standardize the procedure for determining the fire-resisting properties of materials and the value of devices to be used in fire prevention. These are examples of the requests, continually being received from those concerned, to assist the industries in standardizing methods of measurement and testing, and in making

researches involving precision measurements. The demand for higher precision is felt keenly at points where the economies and efficiencies to be secured are especially notable, such as the accurate knowledge of temperatures in metallurgy, ceramics, and similar industries; the location of stray currents from electric mains and their neutralization; the establishment of more precise color standards for use in specifying and reproducing definite colors in inks, dyes, and other products—these and many others emphasize the highly practical nature of precision measurements, a fact too often overlooked.

For the cement industry the Bureau's work in standardizing the testing methods has resulted in improved quality of the sieves submitted for test.

For the watchmaking industry the testing of the higher grade watches was begun, and the Bureau is prepared to undertake such tests regularly four times each year. The procedure and regulations were discussed in a conference of watch manufacturers held at the Bureau during the year.

Precise determinations of the density of commercial materials, such as oils, turpentines, milk, and cream, have been made.

The changes of dimension upon heating must be carefully considered by manufacturers. For this purpose the Bureau is studying the expansion of metals. One research gives promise of correlating the changes of length with corresponding changes in electrical resistance.

The standardization of aneroid and mercury barometers has been pushed vigorously during the past year. The importance of such instruments, particularly aneroids, is caused by their increased use in aviation and exploration. In some cases the ratings of aeroplanes depend upon the readings of aneroids.

The Bureau has done excellent work in standardizing the various heat-measuring instruments used in determining the heating value of fuels. The recent progress in the industrial handling of fuels has been in the direction of specifying the fuel value. To determine this heating value, instruments and methods must be accurate. After extended investigation the newer methods and instruments have been found capable of high precision.

In order to fix the temperature scale for very high temperatures, precise determinations of melting points are of importance. The Bureau completed an investigation of the melting points of the iron group, including the melting points of those metals used as alloys with iron in steel making. The publication of these

results will aid metallurgists in temperature ranges where existing data is of uncertain precision.

The Bureau has determined the melting points of fire brick and materials used in connection with the high heats required in industrial processes. The aim of this work is to assist in developing the most refractory materials suitable for such work.

For the refrigeration industry numerous constants must be obtained. Among them the latent heat of fusion of ice has already been determined by the Bureau. Numerous other laboratory investigations are under way, which together are intended to place the most accurate values of the fundamental data required in refrigerating engineering in the hands of that profession.

Pure materials having definite heating values are issued by the Bureau at cost of production. These enable the user to check the value of his work and to standardize his instruments.

Ten separate lines of investigation in refrigeration were undertaken. Much of the apparatus had to be designed, as the work was in new fields. The experimental results will follow with reasonable rapidity but will require at least two years more. The Bureau has kept closely in touch with the needs of the refrigeration industries and with the National Association of Refrigeration Engineers.

In connection with the industries requiring high temperatures where ordinary thermometers can not be used optical methods must be adopted. The Bureau has made an investigation of the various types of so-called radiation pyrometers in order to standardize the methods of using these instruments. This will tend to greater accuracy and consequent increased efficiency in the industries concerned.

An interesting economic change in the gas industry is the present transition from the lighting value to the heating value as a specification of quality. After extended laboratory and field investigations, the Bureau has prepared a series of publications covering the field of gas calorimetry and standard methods of gas testing. The Bureau researches aim to assist the gas industries in standardizing their product and their methods of testing for quality and quantity. The results of this work are of equal value to the public-service commissions, to which is intrusted the regulation of the relations between producer and consumer. Model gas regulations revised from time to time are published by the Bureau as a basis for commission regulation of this important public utility.

Educational Institutions.

The Bureau publishes three series of publications covering the entire field of the Bureau's work. It also distributes graphic charts of the two systems of measurement used in this country and special pamphlets giving a history of the standards and a description of the metric system. Many of the circulars dealing with methods of testing have been used as the basis of courses of study in certain educational institutions.

In accordance with the law governing the Bureau's work, the Bureau is permitted to standardize scientific instruments for State universities free of charge, and this work has grown. This service is highly appreciated, in view of the fact that much of the value of scientific investigation conducted at universities depends upon the use of accurate measuring instruments. The Bureau also assists State universities by the distribution of standard analyzed samples to be used as auxiliary material in teaching quantitative analysis in courses in technologic chemistry. Conferences of physicists, including instructors from the various universities, are held annually, and in connection with the last meeting an exhibit of scientific measuring instruments and other apparatus was held which proved of great interest and value to all concerned.

The Bureau cooperates with educational institutions in conducting investigations by its readiness to give data and occasionally to furnish materials if such are not obtainable elsewhere, and also in some instances to loans facilities.

Work for State Governments.

The Bureau assists the State legislatures when called upon in connection with the technical details of legislation affecting measurements. These include the units, standards, measuring instruments, and methods of measurement of the various public utilities such as electric light and power service, gas, water, and similar utilities, as well as all questions affecting the inspection of trade weights and measures. In many cases the means to secure such technical data are not available except at the Bureau. The various interests concerned, including the public-service corporations themselves, have requested the Bureau's cooperation in connection with the standardization of these utilities. The Bureau is an unbiased institution, ready to serve all concerned, and in general its work is done and its decisions reached only after the fullest consultation with all interested and after con-

sideration of all sides of the subject. In other words, the Bureau aims to take up mainly such questions as may be settled by laboratory experiment or by direct measurement.

The Bureau of Standards has tested the standard weights of 16 States, which is an indication of the growth of interest in public inspection in the States.

The Bureau undertook to organize an inspection department of weights and measures for the island of Porto Rico, and this was completed during the year with signal success. This service was undertaken at the request of the War Department. The value of establishing at the outset a model system of inspection can hardly be overestimated.

The conference of State officials, referred to above, held at the Bureau of Standards to discuss the State administration of weights and measures inspection was the most successful in the history of these conferences. The wisdom of these conferences is shown by their mutual value in acquainting the Bureau with local conditions and familiarizing the new State officials with the standardization and testing work of the Bureau of Standards.

Precision Standards.

The need for standards of length, mass, capacity, heat, light, and electricity is now generally appreciated. Continual care and laborious experimental work is often needed to maintain many of these standards. In many cases the cooperation of many countries was needed—for example, in the case of the standards of length and mass. In others, the standards are kept at constant temperatures, such as the standards of electromotive force, or under fixed conditions of moisture, humidity, or pressure. In all cases, whenever possible, the Bureau aims to steadily improve the precision standards or the methods of maintaining or using them.

In quite a different order of activity, new kinds of standards are being developed; for example, standards of quality and standards of performance. These standards are still in the initial stages, but will eventually become of supreme importance in furthering industrial advance. The keen interest in recent years in standard specifications is an index of what must eventually extend to every material, device, machine, or process in industry.

The standards of quality for materials must be fixed, so that the best quality suitable for each use may be clearly specified. The standards of performance of devices and machines must be so fixed that by them the efficiency may be judged. In recent years energy

has become a commercial product and is distributed in various forms. Electric energy, for example, may be delivered under various pressures, and may be direct or alternating current, and in the latter case may vary in frequency. The importance, therefore, of clearly specifying the form in which energy shall be delivered makes it a technical matter involving accurate measurements. Specifications for electric current covering both quality and quantity may often be made even more exact than for materials.

It has been the aim of the Bureau to keep abreast with the technical needs for the more advanced forms of standards. Evidence is not wanting that industry has entered upon the stage where such advanced standards are indispensable.

New Standards.

The high economic and scientific value of radium lead the Bureau to acquire suitable "radium standards" for measuring the radium content of samples intended for sale or technical uses. During the year many samples of radium materials have been certified for the public by comparison with the sealed radium standards of the Bureau.

A new kind of standard was established at the Bureau during the year, namely, a standard of radiation. The new standards of radiation are incandescent lamps, the intensity of radiation of which was measured in terms of the simple units of measure by which energy is defined. The standards met with instant demand from investigators here and abroad in the field of radiation research.

It is of interest to note that the Bureau distributed at cost nearly 300 standards for heats of combustion—naphthalene, benzoic acid, and cane sugar—each of highest purity and definite heating value, certified by the Bureau. The instruments and methods used in testing the heating value of fuels may be readily standardized by these standard materials. They bear the same relation to fuel testing that standards of length bear to surveying. Standards of melting points are being planned to aid metallurgists and others in standardizing the readings of their high-temperature measuring standards. Other optical standard materials include pure sugar for finding the 100° point in saccharimetry, rare gases for obtaining light of specific wave lengths, material of certified and defined color for use in butter and oil standardization.

The 100° point in saccharimetry is the scale reading for perfectly pure sugar. It is analogous to the length of the day as fixing

the unit of time—the second. The universally accepted value of the 100° point was found by the Bureau to be in error by about 1 part in 1,000. The Bureau's precision determination of this point, now completed, is a distinct contribution to sugar testing and polarimetry.

The Bureau is measuring certain wave lengths of light with the highest possible precision for use as standards. The use of known wave lengths of light is just entering technical work, but their value in the study of the stars and of the sun can scarcely be overestimated. Upon them are based the measurements of stellar motion in the line of sight. In the study of the sun the same principles are applied in an even more remarkable manner. It may almost be said that a knowledge of the wave lengths of light has revolutionized astronomical and solar research. The extent of possible applications of precision measurements with light waves is almost unlimited. The work of the Bureau in this field is to cover as fully as possible the fundamental determinations of standard waves of monochromatic light, so that the results may be available for direct application in scientific and technical work.

Standards of color depend upon an accurate knowledge of the intensity and wave length of the component colors. One method of specifying color defined a standard in terms of the wave length of the dominant hue and the percentage of white light present. Spectroscopy bears somewhat the same relation to light that chemical analysis bears to materials. Spectrometry includes the determination of colors (wave lengths) present in any light, and the intensity of each. The instrumental equipment required in establishing color standards must therefore be accurate and based upon theoretically sound optical principles. Color standards have important and widespread applications in the industries making or using dyes, inks, paints, illuminants, textiles, paper, and clay products, and in many branches of science as well.

Government Testing Bureau.

The various branches of the Government have increasingly availed themselves of the facilities offered by the Bureau for testing, until during the past year about 90 per cent of the Bureau's testing was for the Government departments. The Bureau has thus become, in fact, the testing laboratory of the Government, having performed about 100,000 tests during the year for the Government departments. It aims to serve the scientific and

other bureaus as to questions affecting units, standards, measuring instruments, and methods of testing of materials, devices, and apparatus, for which work the Bureau is specially fitted by equipment, facilities, and personnel to render expert assistance. This work is carried on in such a manner that the experience gained may be utilized in drafting improved specifications; that is, in developing true standards of quality, designed to place Government purchases on a scientific basis as regards quality.

The Bureau has tested a large number of sets of test weights for the Post Office Department to be used by their inspectors in verifying the scales in use in that Department, and has inspected the scales manufactured for the Postal Service to ascertain whether they are satisfactory for their intended use.

The importance of chemical tests and their correlation with service behavior has increasingly engaged the attention of the Bureau experts. The Bureau has conducted approximately 10,000 chemical tests of materials, for practically all the Government departments. By supplementing the chemical analysis with physical tests, it is frequently found possible to select the materials which would best meet service conditions, and to specify such material in units of measurement.

The Bureau has made special studies of the paper, ink, and binding cloth used in Government documents, and the same are now purchased under specifications and submitted for test. During the year the Bureau published methods of analysis of printing inks which have been found adequate.

Both the manufacturer and the Government gain by more definite specification of the properties of the materials desired. It is the growing belief that this is possible to an extent little realized at present. The minute specifications of performance of instruments are examples of a method of securing efficient equipment which will doubtless be applied in the future to materials and services of all kinds.

The useful character of the service being rendered by the Bureau in testing structural materials (nearly 9,000 tests during the year) is evident when it is remembered that by this systematic testing of materials before use the durability of Government construction work, and its efficiency and safety, are guaranteed as fully as the state of the arts allow. The many rejections of unfit material are a partial index of the defective construction that would have been possible without such testing. This work leads

directly to the adoption of standard specifications for materials for all purposes, a result which will be of benefit not only to the industries concerned but to the entire public.

Information.

A most important service which the Bureau renders is in furnishing to the public, to the various industries, and to the Government bureaus technical information on subjects within the Bureau's field. During the year thousands of letters were received requesting information of the most varied character as to standards and methods of measurement.

The requests come from a wide range of sources—Government offices (city, State, and national), public-service corporations and commissions, industrial laboratories and plants, commercial houses engaged in foreign trade, consulting engineers, educational institutions, and the general public. The replies range from a brief answer to a carefully prepared report, depending upon the importance of the question involved and the service to be rendered.

In many cases the inquiries emphasize the need of information and are followed by new publications prepared on the subjects within the Bureau's field, but upon which the data are either unavailable elsewhere or widely scattered in technical literature. The inquiries thus serve partially to guide the Bureau in selecting topics for circulars based upon the relative urgency of the subjects pressing for publication. These printed circulars then become standard replies to many hundreds of the letters received annually.

In many cases the adoption of methods in the industries depends upon the Bureau's reply. The Bureau is often enabled to suggest means of securing improved economy and efficiency in industrial processes. In other cases the Bureau prevents costly experiments, and minimizes the chance of failure, especially where standards or measures are involved. The latest methods of measurement and other data are usually known or available to the Bureau, which thus serves as a clearing house for technical information as to materials, units, standards, instruments, and methods of measurement. An unique aspect of this work is that without police power to enforce its decisions the Bureau exerts so widespread an influence, by virtue of its unbiased attitude and its carefulness in arriving at accurate results. The success with which the Bureau is making its results available to the public through correspondence, consultation, and publication

is recognized by the national technical societies through which so largely the work of the Bureau enters current technical practice.

Materials and devices are often advertised and sent through the mails which are properly subject to a fraud order. Extravagant claims induce investment by those with limited means. The Bureau has rendered frequent service in showing the fraudulent character of such inventions. Inventors apply to the Bureau for the testing of proposed inventions which are utterly unscientific. In many cases vast sums have been wasted on impossible schemes. The Bureau tries to convince such inventors of the hopelessness of their attempt. In such cases the Bureau measures the effect claimed and places the facts before the inventor. On the other hand, the Bureau is constantly assisting intelligent inventors, where its advice is sought, on matters lying within its field.

The Bureau's Influence in Establishing Scientific Research and Methods in the Industries.

Another important function of the Bureau is the stimulus which it has continually given to the establishment of industrial-research laboratories. Since the establishment of the Bureau this has become a distinct industrial movement in this country. Many large corporations now have well-equipped laboratories for scientific research. These utilize the work of the Bureau and have increased the applications of science to industry to a notable extent. The Bureau has shown the need for technical research by calling attention to unsettled problems, by pointing out the values of specific researches, and by actual instances of service rendered, so that it is not surprising that its influence in this respect has been widespread.

Buildings.

Attention is again called to the necessity of properly housing the structural materials work, especially the branch of the work at Pittsburgh, and which is temporarily located in buildings of the War Department at the arsenal grounds. These buildings are entirely unsuited for the purpose either as to location or character, and the Bureau has considered it unwise to expend any funds on their preparation as laboratories other than the barest necessities. Furthermore, the War Department has repeatedly asked for the vacation of the building.

Every effort is being made by the Bureau to place its structural work on a basis commensurate with its importance. Considerable

heavy equipment has been accumulated both at Pittsburgh and Washington, and more will be needed. Good work is being carried on at both places, but the large testing machines, furnaces, and other heavy equipment should be brought together in a building designed for the purpose and sufficiently large to accommodate all heavy equipment of this kind. It is uneconomical and inadvisable to proceed with the installation of permanent heavy equipment in temporary quarters.

Additional Ground.

The recent opening of Van Ness Street north of the Bureau at a place not adjoining the Bureau's grounds makes it necessary to secure the small strip of land between that street and the north boundary of the Bureau's site. Efforts were made without avail to secure the location of the street in a position adjoining the Bureau's property. It is also advisable to secure the narrow strip between the Bureau and Tilden Street on the south.

Investigation of Clay Products.

The pottery, brick, tile, terra cotta, and other industries engaged in the production of clay products are greatly in need of reliable and authoritative data concerning the properties of these products and the materials which enter into them. In few industries is there any greater opportunity of the improvement by the application of precise measurements and of scientific knowledge of the nature of the products. An item has been included in the annual estimates to provide for this work.

Transverse Testing Machine.

Attention is again called to the necessity of adding to the Bureau's equipment a large transverse testing machine capable of testing the transverse strength of full-sized steel girders used in bridges and buildings; also brick, stone, and concrete arches, floor constructions, etc. The late Alfred Noble, one of the most prominent engineers that America has produced, made the following statement concerning the necessity for the construction of such a machine:

The use of steel and concrete in girders in the construction of bridges and buildings is increasing rapidly. The calculations of strength of such girders are to a large extent based on theory, not well checked by actual tests; such tests as have been made were on small girders, and the value of the results in determining the dimensions of large girders such as are now in common use is doubtful. It is questionable whether, on the one hand, many structures in daily use are not perilously near the breaking point; or, on the other hand, whether the structures are not built unnecessarily massive and costly.

There is therefore great need of a large testing machine for actually testing the strength of girders of large size. Such a machine, operated under the direction of the Bureau of Standards, would soon repay its cost by inducing more economical and safer construction.

Since transmitting the original estimate for this machine much additional evidence has been secured, all indicating the great need on the part of engineers for data that can only be obtained by a large machine of this character. A sum sufficient to enable the Bureau of Standards to begin its design and construction has again been included in the estimates.

BUREAU OF THE CENSUS.

During the fiscal year the Census Bureau brought to completion the deferred work of the Thirteenth Decennial Census; began various special compilations of Thirteenth Census statistics; commenced and brought well toward completion the preparation of a "statistical atlas" based on data collected at the Thirteenth Census; tabulated and published data relating to the dependent, defective, and delinquent classes; conducted the decennial inquiry on wealth, debt, and taxation; completed its quinquennial canvass of electrical industries and a considerable part of the work of compiling the statistics obtained; began preparations for its quinquennial census of manufactures, the field work for which will begin early in the calendar year 1915; compiled and published the biennial Official Register of the United States; carried on its regular annual investigations covering vital statistics, statistics of cities, and cotton production, distribution, and consumption; completed the annual forest-products inquiry relating to the calendar year 1912; made its semiannual collections and publications of statistics of stocks of leaf tobacco held by manufacturers and dealers; and answered numerous mail requests for information contained in its records.

COMPLETED WORK.

Deferred Thirteenth Census Work.

During the fiscal year Volumes I, II, III, V, VIII, X, and XI of the final reports of the Thirteenth Census were issued, and Volume IV was ready for distribution on July 7, 1914.

The report on Mines and Quarries (Vol. XI) was issued December 30, 1913. Its scope, as originally planned, was considerably curtailed in order to avoid greater delay in publication.

The report on Occupations (Vol. IV), as already stated, was ready for distribution July 7, 1914, and four bulletins relating to occupations were issued in July and August, 1914.

In addition to the reports mentioned above, there were issued during the fiscal year three editions of the Abstract, with supplements for Alaska, Hawaii, and Porto Rico, respectively; 16 reprints, in bulletin form, of chapters in Volume I (Population—General Report and Analysis); 12 reprints, in bulletin form, of chapters in Volume V (Agriculture—General Report and Analysis); 1 reprint, in bulletin form, of a chapter and table in Volume VIII (Manufactures—General Report and Analysis); 40 bulletins on manufacturing industries, which later formed sections of Volume X (Manufactures—Reports for Principal Industries); 1 bulletin relating to manufactures in metropolitan districts, which later formed a section of Volume X; 1 bulletin relating to iron mines, which later formed a section of Volume XI (Mines and Quarries); and 1 special bulletin relating to the stability of the agricultural population.

Forest Products.

The annual collection of statistics of forest products was inaugurated in 1906, in accordance with an order of the Secretary of Commerce and Labor, on the initiative of the Forest Service of the Department of Agriculture. The inquiry, although never authorized by Congress, was continued by the Bureau of the Census, in cooperation with the Forest Service, from 1906 until 1912, when it was abandoned by the Census Bureau upon the recommendation of the expert special agents (former officials of the Census Bureau) who were appointed by the Director early in the fiscal year to devise plans for expediting the delayed work of the Bureau and to make recommendations for such changes as seemed desirable. The recommendation made by these expert special agents with reference to the forest-products inquiry was as follows:

That the annual compilation of the statistics of forest products be abandoned. There appears to be no authority of law for an annual inquiry of this character, which the records show to have cost from \$20,000 to \$40,000 a year.

In view of the importance of these statistics and of the demand for them from large consumers of forest products and others interested in the conservation of natural resources, the Forest Service undertook the task of collecting the figures for 1913. It has been decided that the Census Bureau collect the figures for 1914 in connection with its regular quinquennial census of manu-

factures, which will cover that year; and an effort will be made to secure the passage of an act or resolution of Congress authorizing the Bureau, in cooperation with the Forest Service, to continue the annual collection of these statistics.

The work done during the fiscal year included the completion of the canvass covering the calendar year 1912, the compilation of the results, and the preparation of the report, an octavo pamphlet of 60 pages, which was issued February 7, 1914.

Official Register of the United States.

This publication, a quarto volume of 876 pages, was compiled during the first half of the fiscal year, and was ready for distribution January 7, 1914. As a result of suggestions made by the Department of Commerce, the urgent deficiency act approved October 22, 1913, provided for the discontinuance of the publication of Volume II of the Official Register, relating to the Postal Service. The act also provided for the omission of the list of ships and vessels belonging to the United States, formerly included in Volume I. This legislation greatly simplified the preparation of the Official Register and very materially decreased the expense of the work.

Legislation authorizing the adoption of the following plan with reference to the preparation and publication of the Official Register of the United States has been recommended to Congress:

(1) The establishment of a card directory, prepared and maintained by the Civil Service Commission from information furnished by the executive departments and independent offices, showing the name and status of every person in the Government service except the officers and enlisted men of the Army, Navy, Marine Corps, and Revenue-Cutter Service. Lists of officers of the Army, Navy, and Marine Corps are already published annually in the Army Register and Navy Register, issued by the War and Navy Departments, respectively.

(2) The elimination from the Official Register of detailed lists of all employees, by name.

(3) The publication annually by the Bureau of the Census of an Official Register containing: (a) A list of all employees of the Government (except officers and enlisted men in the Army, Navy, Marine Corps, and Revenue-Cutter Service) whose duties are of an executive, supervisory, technical, or professional character, and whose compensation is \$2,000 or more per annum; (b) statistics

relating to the Government service, to be prepared from the Civil Service Commission's card directory.

This recommendation was mentioned in the annual report of the Secretary of Commerce for the fiscal year 1913, as coming from the Director of the Census, and was made by the Director in his annual report for that year. The proposed plan, if adopted, will result in very material saving to the Government, will at the same time preserve all the valuable features of the present Official Register, and will provide for a complete and up-to-date record of the entire personnel of the Government in one central office (the Civil Service Commission), from which the Census Bureau will be able to prepare accurate statistical statements when called upon to do so by the President or by Congress.

A bill substantially embodying the foregoing plan (except that \$1,500 instead of \$2,000 was fixed as the lowest compensation of employees whose names should be included in the Official Register) was introduced in the House of Representatives on August 8, 1913, by Hon. W. C. Houston, of Tennessee.

CURRENT WORK.

Wealth, Debt, and Taxation.

This is one of the most important of the Bureau's "intercensal" inquiries. A portion of the data for the current series of bulletins, which relate to the fiscal year ended June 30, 1913, was obtained from printed reports of the Federal Government and of States, cities, and counties; the remainder was gathered by personal canvass. The office work on this investigation was commenced in October, 1913. The field work began March 21, 1914, and during the period from that date to June 30, 1914, the employees in the field numbered, on the average, 86.

Work is progressing rapidly and satisfactorily on this inquiry. Two bulletins—"National and State Indebtedness and Funds and Investments" and "Taxation and Revenue Systems of State and Local Governments"—have been issued since the close of the fiscal year 1914; another, "National and State Revenues and Expenditures, 1913 and 1903; and Public Properties of States, 1913," will come from the press in a short time; and four more—"County and Municipal Indebtedness, 1913, 1902, and 1890; and Sinking Fund Assets, 1913," "County Revenues, Expenditures, and Public Properties, 1913," "Municipal Revenues, Expenditures, and Public Properties, 1913," and "Assessed Valuation of

Property and Amounts and Rates of Levy, 1860-1912"—will be issued late in 1914 or early in 1915. The final bulletin, "Abstract—Wealth, Debt, and Taxation," will contain an abstract of the statistics presented in the seven bulletins just named, together with an estimate of the true value of all property in the United States, both subject to and exempt from taxation. This final bulletin will be issued early in 1915—about a year and a half from the commencement of the office work and about a year from the commencement of the field work. In this connection it may be stated that the field work on the last preceding inquiry on this subject was commenced March 1, 1903; that two bulletins, relating to municipalities, were issued August 31, 1905, and July 12, 1906, respectively; and that the complete report was ready for distribution May 7, 1907—more than four years from the beginning of the field work. No data are available from which to make anything like an exact comparison of the two investigations with respect to cost; but there has been a very material saving in this respect, approximately \$150,000, due in part to the fact that some 15 or 20 per cent of the statistics collected at the present inquiry were obtained from published reports of the various governmental units, the work being done in the office at Washington instead of by personal canvass in the field, and in part to the early completion of the investigation, which was finished before the close of the calendar year 1914.

Electrical Industries.

Statistics of electrical industries are collected quinquennially by the Census Bureau. The current inquiry relates to the calendar year 1912. The field work for this census was begun in January, 1913, and was completed in November of the same year. The field employees numbered, on the average, 27. Press summaries of the statistics were issued from time to time as the tabulation progressed, beginning in December, 1913, and two bulletins were issued in May and June, 1914, respectively, the first presenting the principal data in regard to telephones and telegraphs and the second giving the more important statistics relating to central electric light and power stations and street and electric railways. The final reports will be issued late in 1914 or early in 1915 in the form of two quarto volumes. One, entitled "Central Electric Light and Power Stations, and Street and Electric Railways," and comprising nearly 600 pages, will include in more detailed form the statistics contained in the bulletin under the same name.

The other, entitled "Telephones and Telegraphs," and comprising about 250 pages, will contain in amplified form the data given in the bulletin on telephones and telegraphs, together with a section showing telephone rates throughout the United States. Statistics relating to municipal electric fire-alarm and police-patrol signaling systems will also be included. Comparative statistics will be given in each report, covering two five-year periods (1902-1907 and 1907-1912), thus bringing out definitely and clearly the enormous growth of electrical industries during the past decade.

Dependent, Defective, and Delinquent Classes.

Under this heading come the Bureau's decennial reports on benevolent institutions, paupers in almshouses, the insane and feeble-minded in institutions, prisoners and juvenile delinquents, and the blind and deaf. The report on benevolent institutions, a quarto volume of 411 pages, was published during the year, and three bulletins, relating, respectively, to insane and feeble-minded in institutions, to paupers in almshouses, and to prisoners and juvenile delinquents, have been issued, which will later be followed by the final reports on these classes. With respect to the insane, feeble-minded, and paupers, all the fundamental data are presented in the bulletins already issued; but the final reports, now nearly ready for publication, will present in addition a discussion and analysis of the statistics, including ratios, percentages, and diagrams, while the final report on prisoners and juvenile delinquents will also contain certain fundamental data not heretofore published. This volume will be ready early in 1915.

These reports will be more complete and comprehensive in scope than any which the Bureau has previously published on these subjects. The report on the insane in particular, which has been submitted in proof to well-known authorities on insanity, has been commended as representing a marked advance in the statistical treatment of that subject.

A summary of State laws relating to the care of the dependent classes has just been issued.

Statistical Atlas of the United States.

This publication was prepared during the fiscal year and will be issued this month. It will be a quarto volume containing 99 pages of text and 503 plates carrying maps and diagrams presenting graphically the more important facts brought out by the various decennial and other census inquiries. The current sta-

tistical atlas covers the subjects of population, agriculture, manufactures, mines and quarries, cotton production and consumption, financial statistics of cities, vital statistics, religious bodies, marriage and divorce, and insane in hospitals. The purpose of this volume is the presentation of the more significant statistics collected by the Census Bureau in such form that they may be readily grasped and understood.

Special Compilations of Thirteenth Census Statistics.

After the completion of the work of a decennial census the Bureau makes various special compilations of the statistics collected at that census which it would not be feasible to include in the regular reports. Such compilations of Thirteenth Census material include a report on Indians; supplementary occupation statistics; bulletins on Chinese and Japanese in the United States, the stability of the agricultural population, and ages of farmers; and a report and bulletin on Negroes in the United States.

The Indian report, a bound volume of several hundred pages, will be issued next month. A 25-page bulletin relating to the Indian population was published in June, 1913.

Work is now under way on a special report presenting supplementary occupation statistics. This report will include the following subjects: Distribution of all persons occupied, by sex, according to color or race, nativity, and parentage, and age periods in detail; occupations of women; occupations of children; occupations of foreign-born workers according to country of birth; occupations according to class of worker; and unemployment data, for wage workers only.

The Bureau has just issued a 50-page bulletin in which are brought together all the statistics regarding Chinese and Japanese in the United States which are found in the Thirteenth Census reports on Population, Occupations, and Agriculture. There has been a great demand for this bulletin from the Pacific Coast and Rocky Mountain States.

Two special bulletins relating to the agricultural population have been issued—one, of 22 pages, entitled "Stability of Farm Operators, or Term of Occupancy of Farms," and the other, of 35 pages, entitled "Age of Farmers, by Color of Operator, Character of Tenure, and Size of Farm." The former was ready for distribution in June and the latter in August, 1914.

Early in August, 1914, the Bureau began the preparation of a special report relating to Negroes in the United States. A pre-

liminary bulletin will soon be issued, and it is expected that the complete report will be published about March 1, 1915. It will show, for the Negro race, the principal census data relating to population, occupations, agriculture, mortality, membership in religious bodies, and marriage and divorce. The figures are being compiled from census publications or other material already in possession of the Bureau. A similar report, based on the census of 1900, was one of the most popular of the Bureau's publications.

Vital Statistics.

During the fiscal year ended June 30, 1914, the Bureau's annual mortality reports for 1910, 1911, and 1912 were issued. These reports, and particularly those for 1910 and 1911, had been delayed because of the pressure of the Thirteenth Census work. In order to expedite the publication of the 1912 report, the tables showing detailed death rates were omitted. These rates are included in the report for 1913, which has just come from the press.

The Index of Joint Causes of Death, intended for use of registrars of mortality statistics, showing the assignment to the preferred title of the International List of Causes of Death when two or more causes are simultaneously reported, has recently been issued. This publication, an octavo volume of 308 pages, has been "printed as proof," in order to enlist constructive criticism from registrars and others concerned or interested in the recording, transcription, compilation, and publication of mortality data.

An important piece of work now in progress is the preparation (for the first time by any Federal bureau) of a series of life, or mortality, tables, based on the population and mortality statistics of 1900 and 1910, showing "expectation of life" for various elements of the population—male and female, white, Negro, urban, rural, etc.—in the original registration States as they existed in 1900, taken as a group. Certain of these States, ranking high in population, such as New York, Massachusetts, and Michigan, will also be represented individually. These tables are similar to those used by life insurance companies, and their preparation, which is under the charge of Prof. James W. Glover, of the University of Michigan, involves actuarial computation of an intricate character.

During the fiscal year the States of Georgia and South Carolina passed satisfactory death-registration laws, based upon the "model law" recommended by the Bureau of the Census. The enactment of this legislation was due in large part to the efforts of the Bureau.

Statistics of Cities.

The report on general statistics of cities for 1909, a quarto volume of 197 pages, was in page proof on June 30, 1913, and was issued soon thereafter. Up to 1909 this report had been issued biennially, but, owing to the necessity for concentrating the force of the office as far as possible on the work of the Thirteenth Census, the report for that year was considerably delayed, and it was decided not to issue it for 1911 and 1913. The annual reports on financial statistics of cities, however, carry a few statistics of a general character.

The 1911 report on financial statistics of cities of 30,000 and over had also been delayed by the Thirteenth Census work. This report, a quarto volume of 401 pages, was completed November 15, 1913, and was ready for distribution December 8, 1913.

The 1912 bulletin on financial statistics of cities of 30,000 and over was completed December 15, 1913, and was ready for distribution December 22, 1913. The expert special agents (former officials of the Census Bureau) who were appointed early in the fiscal year to devise plans for expediting the publication of the reports of the Thirteenth Census and of such annual reports as are issued by the Bureau recommended the preparation of this abridged report, in bulletin form, on financial statistics of cities, and the omission of the regular report for 1912. After the completion of the bulletin, however, it was found practicable to issue the regular report. This publication, a quarto volume of 410 pages, was ready for distribution June 6, 1914.

The 1913 report on financial statistics of cities having a population of 30,000 and over was completed during the fiscal year ended June 30, 1914, and was ready for distribution early in September. This publication was issued in the form of a quarto bulletin of 73 pages.

Cotton and Cottonseed.

During the year the Bureau collected and published its regular preliminary and annual statistics relating to cotton ginned, to cotton consumed, imported, exported, and on hand, and active cotton spindles, and to cottonseed and linters. There are now 10 preliminary reports on cotton ginned issued each year, beginning with that relating to August 31 and ending with that for February 28 of the following year. The preliminary reports on stocks held and consumption of raw cotton by warehouses, mills, etc., are published monthly during the entire year. Three preliminary reports

on cottonseed crushed and linters obtained are issued each year, the first relating to November 30, the second to December 31, and the third, covering the season's crush, to February 28. These preliminary reports are all distributed in card form. The reports on cotton ginned are published approximately 8 days, those on stocks and consumption approximately 14 days, and those on cottonseed and linters approximately 16 days after the dates to which they relate.

The Bureau also publishes annually two quarto bulletins, one relating to production of cotton, cottonseed, and cottonseed products, with condensed data regarding supply and distribution of cotton, and the other giving more detailed statistics as to supply and distribution of cotton, together with data for active cotton spindles and exports and imports of raw cotton and its manufactures. The bulletin on the production of cotton and cottonseed products, relating to the crop of 1913, comprised 79 quarto pages and was issued in July, 1914. The bulletin on supply and distribution of cotton for the year ended August 31, 1913, contained 40 quarto pages and was issued November 1, 1913.

Hereafter but one annual cotton bulletin will be compiled. This bulletin will relate both to the production and to the supply and distribution of cotton, and will be ready for distribution about September 15.

Tobacco.

Under authority of an act of Congress approved April 30, 1912, the Bureau makes semiannual collections and publications of statistics of stocks of leaf tobacco held by manufacturers and dealers. The reports for the fiscal year 1914 relate to October 1, 1913, and April 1, 1914, and were issued, in card form, November 13, 1913, and May 9, 1914, respectively.

These statistics are collected almost entirely by correspondence, but the Bureau of Internal Revenue of the Treasury Department renders valuable assistance in correcting the reports and in obtaining returns from establishments which fail to respond promptly to the inquiries of the Census Bureau.

The Bureau's tobacco reports have been generally approved by those interested and have received but little adverse criticism. A special effort is made to publish the figures as soon as possible after the dates to which they refer, and it is gratifying to note that each report since the inauguration of this work has been issued

more promptly than the preceding one. In fact, the last report, relating to April 1, 1914, was ready for distribution in only two-thirds the time required for the preparation and publication of the first one, relating to October 1, 1912.

In July, 1914, five representative tobacco planters, dealers, and manufacturers were given appointments as expert special agents and called to Washington for the purpose of discussing improvements in the method of collecting these statistics; and it is the intention to hold a similar meeting of these expert special agents immediately after the publication of the forthcoming tobacco report, which will relate to October 1, 1914, in order that they may examine and criticize the statistics and suggest such changes in the work as may seem desirable. It is expected that substantial benefit will result from the adoption of some of the suggestions made by these tobacco experts.

Information Furnished by Correspondence.

In addition to the collection and publication of statistics along the various lines already mentioned, the Bureau handles numerous requests from local governments and from individuals for information of one kind and another. More than a thousand such requests for population data alone were received and answered during the year. A great many requests were also received for genealogical data and for transcripts of census records regarding ages of soldiers, to be used in connection with applications for pensions or increases of pensions.

PLANS FOR FUTURE WORK.

In addition to conducting the several annual inquiries already discussed, the Bureau of the Census will, in 1915, take its regular quinquennial census of manufactures and its first quinquennial census of agriculture.

Census of Manufactures.

This census, the field work for which will begin early in 1915, will relate to the calendar year 1914. Preliminary work, consisting largely in the preparation of index cards for listing the manufacturing establishments, was commenced in December, 1913, and will continue throughout the present calendar year. A special effort—which, it is expected, will be attended by a large measure of success—is being made to unify the Census Bureau's classifications with those of the Bureau of Foreign and Domestic Commerce, in order to make possible a closer approach to complete com-

parability of the former Bureau's statistics of manufactures and the latter's statistics of exports and imports.

Another feature of the preparatory arrangements for this census, and one which distinguishes it from preceding censuses, is the effort that has been made to secure the cooperation and assistance of prominent manufacturers and of representative commercial and trade bodies of all kinds. Letters have been written to such manufacturers and to all such organizations of which the Census Office has any knowledge, inviting cooperation and requesting suggestions, particularly in reference to the inquiries carried on the various special or supplementary schedules. A trip was made during January, 1914, by the Director and the Chief Statistician for Manufactures, to Philadelphia, New York, and Boston, where conferences were held, with very gratifying results, with the leading commercial and industrial organizations of those cities; and a similar trip through the eastern North Central States, extending as far south and west as St. Louis, has been arranged for the latter part of 1914, from which equally satisfactory results are anticipated. Many of these organizations have, at the request of the Census Bureau, passed resolutions to the effect that they recognize the importance of the census of manufactures and will endeavor in every way possible to assist in and expedite the work.

The aid of Members of the Senate and House of Representatives, of the Department of Agriculture, of the Bureau of Corporations, and of State statistical organizations has also been enlisted.

In short, more has been done already, and will be done, in these directions in preparation for the census of 1915 than has been undertaken in connection with any preceding census of manufactures; and it is confidently expected that the results will be published more promptly and will be of greater value than ever before.

Census of Agriculture.

The Thirteenth Census act, passed in 1909, provided for a census of agriculture to be taken in 1915 and at 10-year intervals thereafter. This intercensal inquiry will be much more limited in scope than the agricultural inquiry made in connection with each decennial census of population. Estimates for the appropriation needed will be submitted to Congress at its next regular session, together with requests for such slight changes in regard to date of enumeration, scope, and method as may seem desirable at that time.

Statistics of Federal Employees.

The Bureau has under consideration the compilation of statistics of the executive civil service similar in scope to those in Bulletin 94, Statistics of Employees: Executive Civil Service of the United States: 1907. This work could be taken up in connection with the preparation of the next edition of the Official Register, which will relate to July 1, 1915, and the results could be published in bulletin form after the issuance of the Register. In this bulletin the employees of the executive civil service, exclusive of postmasters and certain other specified employees, would be classified according to sex, race and nativity, age, marital condition, character of appointment with reference to the civil-service rules, character of work, period of service, compensation, State or Territory from which appointed, and military or naval service in the Civil or Spanish-American War.

There is a considerable demand for statistics of this nature, which are not now available in any Government publication. The extra data needed for their compilation could be obtained from the departments and independent offices, in connection with the preparation of the Official Register, at a comparatively small increase of expense; and it is believed that their usefulness would furnish ample justification for undertaking the work.

OFFICE FORCE.

The appropriation act for the fiscal year 1914 provided for 621 permanent employees of the Census Bureau; the number provided by the act for 1915 was 589. This reduction, with the consequent material decrease of expense, was due to the removal of the Bureau to the new Department of Commerce building and the consequent consolidation of its subclerical or labor force with that of the Department. No material change was made in the administrative and clerical force.

APPROPRIATIONS AND EXPENDITURES.

Financial Statement, Fiscal Year 1914.

Administrative:

Salaries for administrative places.	\$34,963. 61
Salaries for Division of Correspondence and Mail.	21,148. 48
Salaries for library.	5,362. 60
Salaries for watch, labor, and char forces.	25,740. 51
Rent.	21,000. 00
Stationery.	3,218. 32
Miscellaneous expenses.	21,590. 69
Books and periodicals.	490. 73

Total. \$133,514. 94

Machine shop:

Salaries.....	\$10,739.43
Materials, supplies, etc.....	34.46

Total.....

\$10,773.89

Geographer's Division: Salaries.....

20,697.84

Thirteenth Census work:

Population—

Supervision.....	\$11,291.64
General and State reports.....	19,141.13
Occupations.....	114,052.44
Tenure of homes.....	31,124.56
Miscellaneous work.....	9,546.68

Total..... 185,156.45

Agriculture—

Supervision ^a	7,780.11
General and State reports.....	8,553.63
Color, tenure, and size.....	1,243.88
Plantations.....	194.04
Irrigation.....	116.66

Total..... 17,888.32

Manufactures—

Supervision ^b	9,445.77
Completion of manufactures reports..	11,382.36
Industrial districts.....	2,281.66
Mines and quarries.....	2,541.39

Total..... 25,651.18

Institutions..... 22,715.17

Revision and Results..... 16,769.30

Publications..... 9,950.28

Negroes in the United States..... 695.56

Chinese and Japanese..... 216.67

Total..... 279,042.93

Annual investigations:

Cotton.....	257,100.03
Tobacco.....	10,239.29
Forest products.....	3,670.78
Electrical industries.....	73,280.87
Vital statistics.....	82,423.41
Statistics of cities.....	66,445.36

Total..... 493,159.7

Wealth, debt, and taxation..... 151,477.86

Census of manufactures, 1914..... 32,804.89

Official Register..... 3,911.84

Miscellaneous..... 7,642.33

Grand total..... 1,133,026.26

^a Includes cost of supervision for wealth, debt, and taxation.

^b Includes cost of supervision for forest products, cotton, tobacco, electrical industries, and preliminary work on census of 1914.

Title of appropriation.	Appropriation.	Expenditure.
Salaries, Bureau of the Census, 1914.....	\$711,240.00	\$693,245.52
Tabulating machines, Bureau of the Census, 1914.....	12,500.00	10,773.89
Collecting statistics, Bureau of the Census, 1914.....	404,000.00	382,707.11
Rent, Bureau of the Census, 1914.....	22,080.00	21,000.00
Purchase of books of reference and periodicals.....	500.00	490.73
Contingent expenses.....	25,000.00	24,809.01
Total.....	1,175,320.00	1,133,026.26

* Includes unexpended balance of appropriation for collecting statistics, Bureau of the Census, 1913, \$50,000, transferred to appropriation for 1914 by urgent deficiency act of Oct. 22, 1913.

Appropriations, Fiscal Year 1915.

The appropriations for 1915 amounted to \$1,537,460. There was a decrease of \$21,280 in the item for salaries, due in part to the discontinuance of one clerical position and the transfer of certain others to the roll of the Department of Commerce, but principally to the discontinuance of a number of subclerical positions and the transfer of others to the roll of the Department as a result of the removal of the Bureau of the Census from its old quarters to the new Department building.

The appropriation for tabulating machines was reduced to \$12,000.

The item for collecting statistics was increased to \$835,000, in order to provide for the quinquennial census of manufactures, to be taken during the calendar year 1915.

The item for rent was discontinued by reason of the removal of the Bureau of the Census to the new Department building.

The appropriation for the purchase of books and periodicals remained unchanged.

The item for contingent expenses was discontinued, such expenses now being paid from the appropriations for the Department of Commerce.

PUBLICATIONS ISSUED.

During the fiscal year the Census Bureau issued the following reports in the form of bound quarto volumes:

Population, 1910:	Date issued.
Vol. I. General Report and Analysis. 1,369 pages.....	Jan. 5, 1914
Vol. II. Reports by States, with Statistics for Counties, Cities, and Other Civil Divisions—Alabama to Montana. 1,160 pages.....	Aug. 23, 1913
Vol. III. Reports by States, with Statistics for Counties, Cities, and Other Civil Divisions—Nebraska to Wyoming; Alaska, Hawaii, and Porto Rico. 1,225 pages.....	Sept. 27, 1913

Date issued.

Agriculture, 1910: Vol. V. General Report and Analysis.	927 pages...	Nov. 21, 1913
Manufactures, 1909:		
Vol. VIII. General Report and Analysis.	845 pages.....	Sept. 15, 1913
Vol. X. Reports for Principal Industries.	975 pages.....	Dec. 30, 1913
Mining, 1910: Vol. XI. Mines and Quarries.	369 pages.....	Dec. 30, 1913
General Statistics of Cities, 1909.	197 pages.....	Sept. 18, 1913
Financial Statistics of Cities, 1911.	401 pages.....	Dec. 8, 1913
Financial Statistics of Cities, 1912.	410 pages.....	June 6, 1914
Mortality Statistics, 1910.	611 pages.....	Oct. 2, 1913
Mortality Statistics, 1911.	572 pages.....	Dec. 17, 1913
Mortality Statistics, 1912.	382 pages.....	Jan. 5, 1914
Benevolent Institutions, 1910.	411 pages.....	Jan. 6, 1914
Official Register of the United States, 1913.	876 pages.....	Jan. 7, 1914

In addition to the foregoing reports, there were issued during the year 84 quarto bulletins and other unbound or paper-bound publications, with a total of 4,298 pages; 7 octavo pamphlets, with a total of 478 pages; 25 preliminary reports, in card form, relating to cotton and cottonseed; 2 semiannual reports, in card form, relating to stocks of leaf tobacco; and approximately 250 press summaries of the Bureau's reports and bulletins, in printed or multigraphed form, varying in length from three-fourths of a column to a column. These summaries were distributed to an average of 1,200 to 1,500 daily newspapers and oftentimes to numerous weeklies as well. They were also sent to State officials, manufacturers, and others interested in the particular industries or subjects covered.

BUREAU OF FISHERIES.

Propagation of Food Fishes.

The fiscal year 1914 was, in general, the most successful in the entire history of fish culture under the Federal Government. This success did not depend on mere numbers of fish produced and distributed, unprecedentedly large though the numbers were, but should be measured also by the fitness for survival and special adaptability for the waters in which an increasingly large percentage of the output was planted. This result has been achieved without any increase in outlay and has depended on augmented efficiency, rigid economy, and development of existing facilities and resources. It is noteworthy that, whereas the cost of fish produced and planted was \$403 per million in 1894 and \$287 per million in 1904, the cost was reduced to \$136 per million in 1914.

The fish-cultural activities of the Bureau were conducted in 34 States, the Territory of Alaska, and the District of Columbia, at

36 permanent hatcheries, and 94 auxiliary and egg-collecting stations.

Upward of 40 of the most valuable food and game fishes of the fresh and salt waters of the country were handled, and the output reached the enormous total of 4,047 millions. Of this number the migratory food fishes of the Atlantic coast streams numbered 485 millions, the commercial fishes of the Great Lakes 1,020 millions, the salmons of the Pacific seaboard 223 millions, the food fishes of the North Atlantic coast (including the lobster) 2,276 millions, and the fishes of the minor interior waters the remaining 43 millions.

Plants of food fishes in rivers, large lakes, and other public waters and in many thousands of small lakes, ponds, and streams were made in every State and Territory. A majority of the plants in minor waters were on farms. The distribution of the output necessitated over 130,000 miles of travel by the special cars of the Bureau and 480,500 miles by detached messengers. All transportation was paid for except about 96,000 miles, which was donated by certain railroads.

So great is the popularity of this work and such the demand for fishes for stocking public and private waters in all parts of the country that the Bureau is unable to produce certain fishes in sufficient numbers to satisfy the requirements. This is particularly true of fishes adapted for cultivation in ponds. Five new hatcheries already authorized will meet some of the more pressing needs, but additional hatcheries in selected regions are urgently demanded, and such have been recommended to the appropriate committees of Congress. Of the five new stations in question, the two in Kentucky and South Carolina have progressed as far as the available funds permitted, and can not be completed without additional appropriations; work on those in Wyoming and Utah has been delayed by unexpected difficulties encountered in obtaining a clear title to the land, but the construction of the Wyoming station, to be located at Saratoga, will now proceed; no site for the remaining hatchery, in Rhode Island, has yet been selected, but it is the intention to establish a salt-water plant adapted for handling the important economic species of the southern New England and Middle Atlantic coasts.

Several experiments in the acclimatization of aquatic creatures have been continued on a large scale in the expectation that important economic results may be attained. Special mention may be made of the planting of Pacific salmon on the coast of Maine

and of Atlantic lobsters on the coast of Washington. During the fiscal year over seven million young humpbacks or pink salmon, hatched from eggs brought from Puget Sound, have been planted in selected streams in Maine, and similar deposits will be made from year to year until the fish is established in its new environment. In November, 1913, over four thousand lobsters, many of them egg-bearing, were transferred with little loss in a refrigerator car from the station at Boothbay Harbor, Me., to Seattle, and thence taken by steamer to the San Juan Islands, where they were deposited in excellent condition at previously selected points.

Frequent embarrassment has arisen in the past from persistent demands for the stocking of certain waters with fish which, in the judgment of officials immediately responsible for the outcome of the work, are unsuitable or undesirable for such waters. These demands are often strongly backed in the best of good will by Senators and Representatives in Congress without full knowledge of the facts or without appreciation of the harm that may result. In order to protect the native fishes from the possible damage that may come from the introduction of inharmonious species, a policy has been adopted, and will be strictly adhered to, under which favorable consideration will not be given to applications for fishes for stocking purposes when their known habits and the experience of fish culturists indicate that injury to the native fishes will result. This applies with special force to the planting of predatory spiny-rayed game fishes of the East in the salmon and trout waters of the Pacific States. It may be noted that the stand taken has received the approval of the fishery authorities and commercial organizations in the Western States; and it is hoped that the policy will be upheld by persons interested in or concerned with the preservation of the supplies of native food and game fishes in all parts of the country.

The Fishing Industry.

Through its field inquiries and local fishery offices, the Bureau keeps in close touch with the commercial fisheries. The number of fishery agents is too small, however, to permit a general canvass of all of the fisheries of the country in one season. The plan has therefore been adopted each year of concentrating on some important branches of the industry, obtaining complete statistical and other information regarding them, and issuing to the trade bulletins giving the results of the inquiries. During the fiscal year 1914 such field canvasses were addressed to the menhaden industry,

the fresh-water mussel fishery, the pearl-button industry dependent thereon, and the tunny fishery of California.

The menhaden is the most abundant economic species on the east coast of the United States, and supports a very important industry, the fish being used for conversion into oil and fertilizer. The menhaden fishery, which is conducted chiefly with purse seines, has for many years attracted general public attention and local criticism because of the possible injury to food fishes resulting (1) from the withdrawal of enormous quantities of menhaden, on which various important market fishes largely subsist, and (2) from the reported actual capture of such market fishes with the menhaden seines and their utilization at the factories. Accurate data showing the extent and condition of this industry are therefore very desirable, and such were obtained during the first half of the fiscal year for the calendar year 1912, immediately preceding.

The fishery is prosecuted from Maine to Florida, and supplies raw material to 48 factories, a majority of which are in Virginia and North Carolina. Nearly six thousand men were engaged in the industry in 1912, and the capital invested amounted to nearly \$8,000,000. The yield was larger than in any previous year for which there are statistics, consisting of more than a billion fish, weighing 637 million pounds, valued in the fresh condition at \$2,210,000. About five million pounds of other fish reached the factories; these consisted chiefly of sharks, skates, sea robins, and alewives, the last representing about 90 per cent and coming mostly from Chesapeake Bay. The manufactured products comprised over 88,000 tons of scrap and 6,650,000 gallons of oil, having a value of \$3,690,000.

A canvass of the mussel fishery in streams tributary to the Gulf of Mexico from the Ohio River southward was made during the year, in connection with an inquiry into the pearl-button industry of the entire country. The mussel fishermen in the region named numbered nearly five thousand and took shells which, with the contained pearls, were valued at nearly half a million dollars. These shells were disposed of to factories located in 20 States and were converted into buttons and by-products worth \$8,880,000. It is this important industry, which had its beginning in the United States as late as 1891, that the Bureau is aiding through the operations of the station at Fairport, Iowa, through practical field work on all streams where suitable mussels are found, and through counsel to fishermen, manufacturers, and legislators as to the best

means for conserving and utilizing the natural supply of raw materials.

Until very recently no use was made of the abundant supply of tunnies on the coast of California. Within a few years, however, the canning of one species of tunny has been started and already nine canneries have been established in southern California. The annual pack now reaches several hundred thousand cases, and meets with ready sale in all parts of the country. Formerly the entire stock of preserved tunny consumed in the United States was imported from Europe. A special investigation of the fishing and canning methods in California has been undertaken and further studies of the abundance and distribution of the fish which supports the industry are planned. It seems probable that this and related species which are now neglected on other parts of our coast may advantageously be canned or otherwise prepared, and the Bureau is working to this end.

For the great high-sea vessel fisheries centering at Boston and Gloucester the most detailed information has been collated and issued monthly to the trade in the form of one-sheet bulletins. These records, which now cover a long period of years, are invaluable for determining the condition and trend of the most important offshore fisheries of the country and for showing the relative value of the various grounds resorted to by American vessels.

In the calendar year 1913 these vessels brought into Boston and Gloucester 8,829 fares or trips of fish, aggregating 162,000,000 pounds, valued at \$4,980,000. Compared with the previous year there was an increase of 1,180 trips, a decrease of 20,000,000 pounds of fish landed, and an increase of \$200,000 in the value of the catch. Cod, cusk, haddock, hake, and herring were taken in less quantities, while halibut, pollock, mackerel, and swordfish showed an increase.

The investigation of the New England otter-trawl fishery has been actively pushed, and a report thereon, with recommendations, will shortly be presented to Congress. The field work was brought to a close in December, 1913, and the task of collating and interpreting the mass of information obtained, and of making a critical survey of the trawl fisheries of other countries, was intrusted to a special committee of Bureau officials.

Coastal and High-Sea Investigations.

The study of the biology, physics, and chemistry of the sea, which comprises the science of oceanography, has attained great

importance in recent years because of its application to practical fishery problems in all parts of the world but more particularly in the North Sea and other waters on the coast of western Europe. The Bureau of Fisheries, acting independently and in collaboration with the International Council for the Exploration of the Sea, has recently improved its equipment for oceanographic work, and is systematizing its methods and laying plans along lines which will be likely to yield the best and most immediate results. While much of this work appears to have only a superficial or remote bearing on practical questions, as a matter of fact it affords data which are indispensable for a proper interpretation of the phenomena presented by the economic creatures of the coastal and offshore waters, and for a comprehensive administration of the sea fisheries.

In the summer of 1913 the auxiliary schooner *Grampus* was engaged in investigations extending from the Gulf of Maine to the Capes of the Chesapeake; and in the spring of 1914 the Bureau cooperated with the Coast and Geodetic Survey in an expedition of the steamer *Bache* from the Capes of the Chesapeake to Bermuda and thence to the coast of Florida, the Gulf Stream being covered by a number of lines of investigation as far south as Key West and Habana. A large amount of valuable data and specimens was collected, and it is evident that this work will yield much new information regarding ocean currents, salinities, and temperatures, all of which have an important influence on the distribution of fishes and the site of fishing operations. In addition, there has been a decided increase in knowledge of the spawning grounds, early life, and food of certain fishes.

Pursuant to an agreement reached at the International Maritime Conference in London, the Department called on the Bureau in the spring of 1914 to participate in the ice patrol of the trans-Atlantic steamship lanes, by placing an oceanographic observer on the revenue cutter *Seneca*, which had been assigned to this work. It is believed that investigations of this character will throw much light on the source and movements of icebergs under the influence of currents; and it is possible that the floating animals and plants, which constitute the "plankton" and which can be traced to their source wherever found, will afford better criteria than the physical phenomena, which are obscured by the blending and interference of the various oceanic currents. Inasmuch as most of this work is done on or near the Grand Banks of Newfoundland, it yields information that is valuable to the fisheries as well as to navigation.

While engaged in oceanographic investigations, the *Grampus* discovered the presence of beds of the giant or smooth scallop in deep water off the coasts of the southern New England and Middle Atlantic States. Later the vessel was detailed to make a more thorough examination, which disclosed the existence of an abundant and hitherto unsuspected supply of this valuable shellfish, which always meets with ready sale. One of the most productive of the beds reaches within 40 miles of Sandy Hook; and as it covers a large area and is readily accessible, it is believed that a lucrative fishery may be developed. An illustrated circular, describing the scallop grounds and calling attention to the possibilities, was issued immediately.

A number of years ago the Bureau demonstrated the abundance of sea bass or blackfish on a fishing bank lying off Beaufort, N. C. The information was not brought prominently to the attention of the local fishermen, and the existence of this fishing ground was disregarded. In 1913, however, as a part of the increased activity at the Beaufort fisheries station, certain of the more enterprising local fishermen were induced to test this bank, with results so promising that the *Fish Hawk* was detailed for further investigations. A number of adjacent banks were found, and a circular was issued giving information as to their location and productiveness. The outcome has been the establishment of a remunerative and growing sea-bass fishery. Arrangements have been made for placing a permanent buoy on the principal bank to aid the fishermen in finding the best grounds, and a further survey will be made in the hope of locating new grounds.

During the winter and spring of 1914 the *Fish Hawk* conducted biological and physical investigations in Chesapeake Bay in connection with a study of the habits and distribution of the fishes of that region. This work will have to be continued over a series of years, but already certain significant information has been obtained which may explain the heavy winter death rate among young food fishes and reasons for the irregularities in the runs of various migratory species.

In response to requests from fishermen and other persons on the coast of Oregon and Washington, the Bureau, in the spring of 1914, began an investigation to determine whether the supply of halibut and other fish on certain grounds lying a considerable distance offshore was sufficiently abundant and regular to warrant the fishermen in equipping themselves for a large fishery. The steamer *Albatross*, with her regular personnel supplemented by a

crew of experienced halibut fishermen, was employed for this purpose, and the work had not been completed at the close of the fiscal year. Valuable information, some of it of a negative character, has been obtained, but the investigation has not progressed sufficiently far to warrant a definite statement as to the possibilities of the grounds in question.

Various other marine-fishery studies have been undertaken and were in progress at the close of the fiscal year. Among these was an investigation of the shrimp of the Gulf and South Atlantic coasts for the purpose of determining what regulative legislation and other kinds of conservation are necessary in order that the supply of this valuable crustacean may be preserved.

Surveys and Investigations of Lakes and Streams.

There has been the usual field work addressed to fresh waters in all parts of the country. These investigations in some cases have been precedent to fish culture or the systematic stocking of waters with desirable food and game fishes, and in others have been related to fishing operations.

In cooperation with the Wisconsin Geological and Natural History Survey, the Bureau has continued the investigation of the interior lakes of the State in an effort to establish the fundamental biological and physical conditions of lake life. The work is being conducted in great detail and will establish a basis for the better understanding of lake phenomena in other regions. In Lake Champlain a biological and fishery investigation has been commenced in cooperation with the Vermont Fish Commission, the primary object being the feasibility of conducting commercial fishing operations for certain food fishes without detriment to the sporting interests, which are a valuable asset to the people of Vermont and New York.

The construction of the great dam at Keokuk, Iowa, has produced a long, narrow body of water known as Lake Cooper, which bears a close resemblance to Lake Pepin, a natural expansion of the Mississippi River in Wisconsin and Minnesota. The fisheries of Lake Pepin are the most important in the entire river, and it is probable that Lake Cooper, under proper treatment, may be made to serve a very useful purpose supplemental to and in no way interfering with its primary use for the generation of electric power. With this in view, the lake has been placed under observation, and there have been begun studies of the minor life on which fishes and other economic forms ultimately subsist, in the expectation

that the conditions may be found suitable for the planting of fishes and mussels. Coincidentally there has been made an investigation of the effects of the dam, turbines, and locks on the movements of migratory fishes.

In continuation of the systematic survey of the mussel resources of the Mississippi Basin, the upper Missouri River drainage system and the Ohio River Valley have been brought under investigation. The special publications covering the results of this work have been very favorably received by the pearl-mussel interests, and in some cases have opened up new fields for industrial enterprise. These studies have afforded data on which to base recommendations for protection of the mussel fisheries, and the steps necessary for the conservation of the mussel resources have been embodied in a report which has been brought to the attention of all the States interested.

The salmons of the Pacific streams have continued to receive attention, and a new and systematic inquiry into the life history of the species inhabiting the Columbia and Sacramento Rivers has been begun. This will involve mainly the study of the scales, a very valuable new means of determining important facts in the lives of fishes.

Operations at the Fisheries Laboratories.

The marine laboratories at Woods Hole, Mass., and Beaufort, N. C., and the fresh-water laboratory on the Mississippi River at Fairport, Iowa, have been actively utilized for investigations, researches, and experiments of either immediate or prospective value to the fishing industries.

At Woods Hole, in addition to the usual studies of the habits, food, abundance, and parasitic affections of fishes, investigations of the dogfish and the sea mussel were conducted during the summer of 1913 as a part of the campaign for the commercial utilization of these waste products. Among the various other matters under consideration was the cause of "green gill" in oysters—an affection which, while entirely harmless, causes large losses to oyster growers because of popular prejudice. Other studies of the oyster were addressed to the life histories of some common oyster enemies, with a view to the discovery of a stage or habit through which they may prove vulnerable to measures for their destruction. There is a growing public demand for definite information regarding the effects on fishes of various water pollutions, and laboratory tests were made as to the toxicity

of various mineral substances likely to be discharged into streams. Closely connected with this subject was a research into the oxygen requirements of fishes, especially in relation to the discharge of sewage and other decaying organic matter which, by its oxidation, reduces or entirely consumes the oxygen supply available for fishes.

At Beaufort steps have been taken looking to the utilization of the laboratory for practical fish hatching at a time when the other activities are reduced, and useful information has been obtained regarding the spawning of a number of important fishes whose cultivation seems desirable.

Owing to the growing demand on the supply of edible crabs in the Beaufort region and elsewhere along the east coast and the apparent depletion of some of the most productive grounds, studies and experiments have been begun for the purpose of determining the necessary conservation measures that will least disturb the fishery.

There has been a continuation of the tests, that have been in progress for several seasons, to determine the practicality of protecting piling and other wood from attacks of marine borers by the use of impregnating solutions of metallic salts and other substances.

Progress has been made in the culture of the diamond-back terrapin at Beaufort, where the feasibility of breeding and rearing under artificial conditions has been amply demonstrated. The recent experiments have been directed to improvements in the methods of feeding and selective breeding with a view to the development of a superior race. The practical results already attained have been such as to lead to the establishment of a near-by terrapin farm, under private auspices, and the outcome confirms the view that terrapin culture is commercially profitable.

Limitations imposed by law as to the manner of acquiring the site for the fisheries laboratory authorized to be located on the Gulf coast of Florida have delayed the establishment of that station. A desirable tract of land near Key West having been donated and this region having been found to afford superior facilities, Congress was asked to amend the law so as to sanction the acceptance of the property directly from the owners. An item to this end was inserted in the act making appropriations for the Bureau which became a law in August, 1914.

The newly established Fairport station, which is one of the best-equipped institutions of the kind in the world, has been made ready for the important practical work for which it was estab-

lished, and supplies a deficiency which has retarded the proper development of the fisheries of the Mississippi Valley. The laboratory admirably combines facilities for research and experiment with practical equipment for extensive operations in mussel and fish culture, and has already justified the wisdom of Congress in providing a station whose utility was quite uncertain. In addition to practical mussel culture on a large scale, the laboratory activities have included the determining of the conditions under which three important species of mussels may be propagated; material progress in rearing young mussels and in fixing the rate of growth of both young and old; experiments looking to the utilization of mussel meats, of which a very large quantity is now wasted; researches into the conditions controlling the production of lustrous and therefore valuable shells; and various other lines of progressive work which is necessary to a full utilization of the mussel resources of the country and has enlarged the field of mussel culture.

The propagation of pearly mussels has already assumed noteworthy proportions. In the fiscal year 1914, the second season of its active prosecution, over 277 million larval mussels were planted in the Mississippi River and its tributaries in Iowa, Minnesota, Wisconsin, Indiana, and Arkansas. To carry this number of young mussels, more than 167,000 fishes were infected and then liberated in the streams. Over 66,000 of these fishes were rescued from overflowed lands, where they would otherwise have perished; and as all of them were of breeding age and mostly of valuable species, this incidental feature of the mussel work would in itself largely justify the expenditures incurred. During the several weeks when the larval mussels are carried as parasites in the gills and on the fins of fishes, the latter roam widely and doubtless give the young mussels a very general distribution throughout the entire Mississippi Basin. The experience now being gained at the laboratory will permit a vast extension of this work at diminishing unit cost, and the results will in due time be unmistakable.

Protection of Alaska Fisheries.

The welfare of the vast fishing industry in the coastal waters and streams of Alaska depends largely on the existence of proper protective laws and on their adequate enforcement. New legislation is demanded in order to meet new conditions, and a general revision of the laws under which the Bureau is now operating

would be desirable. Under rational laws that will recognize the fundamental requirements of the aquatic creatures and not unduly restrict the industry, and with the large discretionary powers now vested in the Secretary of Commerce, it is felt that the fishery resources of Alaska will remain unimpaired for an indefinite period. Furthermore, in view of the large Federal expenditures on behalf of the fisheries of Alaska, provision should be made for increased revenue therefrom; this can be secured without the imposition of any burdensome tax on any branch of the industry.

During the year the fishery laws and the regulations made thereunder have been enforced to the full extent of the facilities provided by Congress, and supplemental aid in this work has been rendered by fur wardens and by employees of the fish-cultural force temporarily detailed for the purpose. It is not claimed that the service has been satisfactorily performed, inasmuch as a material increase in personnel is necessary for the proper patrol of the long coast line, but the agents have been active and zealous, and it has even been possible to extend the inspections along certain lines.

During the season of 1913 the Bureau was for the first time provided with a vessel of its own with which to make some inspections and patrol a portion of the coastal waters. This vessel, the *Osprey*, a secondhand steamer 72 feet long, was put into commission in July, 1913, and has since been in continuous service in southeast Alaska. In the period of most active salmon fishing the operations of this vessel were supplemented by a number of chartered power boats and by the use of a launch attached to the Yes Bay hatchery. This is the only part of Alaska in which any approximation to an adequate enforcement of laws was possible; and additional vessel and boat facilities are most urgently demanded. It is gratifying to note that these have in part been provided in the act making appropriations for the fiscal year 1915.

The large business interests which are at stake and the vast supplies of food and other products which are involved in the perpetuation of the Alaskan fisheries are well known to many persons but are not fully realized by the general public. The weighty responsibility of administering the fisheries in a proper manner is appreciated by the Bureau, and the granting of suitable personnel and facilities is an urgent duty now incumbent on Congress.

In 1913 the fishing industry of Alaska gave employment to more than 21,700 persons, including over 4,000 natives. The investment

in fishing property exceeded \$37,000,000, of which \$34,953,000 represented the salmon industry. The products were valued at about \$15,740,000. The catch of salmon aggregated 59,915,000 fish, from which there were prepared 3,739,000 cases of canned fish valued at \$13,531,000 and miscellaneous products valued at \$917,600. Fewer canneries were in operation than in 1912, and there was a decrease in the salmon yield and in the canned output. In southeast Alaska the run of red salmon was unusually light, but the supply of humpback and dog salmon was large. The general run in central Alaska was below normal, and humpbacks were scarce, while the early fishery for king salmon in Cook Inlet was good. In western Alaska, with fisheries located principally in the Bristol Bay region, there was the best known run of red salmon.

The census of spawning red salmon ascending Wood River was continued in 1913, and showed an increase in the run amounting to 100 per cent as compared with 1912. The figures, while indicating less than one-third the supply that was present in 1908, are not conclusive and should be supplemented by data for other years. It is much to be regretted that this important and unique work, involving the actual enumeration of the entire run of salmon to the spawning grounds of a large stream, had to be abandoned in 1914, owing to the delay in the passage of the appropriations.

The five private salmon hatcheries in operation in 1913 liberated 77,997,000 red salmon fry, and earned for their owners tax exemptions on canned salmon amounting to \$31,197. The two Federal hatcheries produced 50,488,000 red-salmon fry and 16,834,000 humpback fry, and in addition supplied 2,000,000 red-salmon eggs to the Oregon Fish Commission.

Fur-Seal Service.

The important duties and responsibilities of the Department on and in connection with the Pribilof Islands received special attention throughout the year. The annual shipment of supplies required for the support of the native inhabitants of the islands and for the maintenance of Government property were delivered by a chartered vessel in the early part of the fiscal year. The medical and sanitary needs of the natives, which are constant and increasing, have been met as far as the resources of the Department permitted; and schools for the native children have been maintained under efficient teachers.

In the spring of 1914, when the shipment of the usual supplies for the seal islands was under consideration, it was decided to

make the purchases in Seattle, instead of San Francisco, as heretofore. The Department, however, is not committed to any particular market, and will hereafter procure supplies wherever the conditions are most advantageous as regards prices and shipping facilities.

The wireless telegraph station established and maintained by the Navy Department on St. Paul Island was in operation throughout the year, and is indispensable as providing the only means of communication during about two-thirds of the year. The Navy Department has also a small wireless station on St. George Island, enabling that island to communicate with St. Paul. Increased economy and efficiency in administration are secured through this arrangement, and the depressing isolation to which the Department's officials are subjected is considerably relieved. During a large part of the year the wireless station on St. George Island was in charge of the school-teacher assigned to the island, this service being voluntarily assumed in addition to his regular duties.

The land killing of seals being restricted by law to the immediate requirements of the native inhabitants of the islands, the number of young male seals authorized to be taken during the season of 1913 was tentatively fixed at 3,000; later, in the fall and winter of 1913, permission to take additional seals for native food was given. This limit was not reached, but the needs of the natives appear to have been practically subserved; the agent on St. Paul reported the supply of seal meat to have been ample, while the agent on St. George Island advised that more meat could have been used in fall and winter had the seals been available at that time.

The annual shipment of sealskins was made in August, 1913, on the chartered vessel that carried supplies to the islands. Up to that year the sales of Alaska skins had always been made in London. The Department, however, felt that economic and other considerations justified the attempt to establish an American market for this strictly American product which is largely used by the American public. It was therefore decided to initiate the selling of the Government's fur-seal skins in this country, and satisfactory arrangements to this end were made with the firm of Funsten Bros. & Co., of St. Louis. The available skins numbered 2,296, of which 1,896 were sold at public auction in St. Louis on December 16, 1913. The remaining 400 skins were withdrawn from sale at the request of the chairman of the Committee on Expenditures in the Department of Commerce, House

of Representatives, and these skins were unsold at the close of the fiscal year. The gross proceeds of the sale were \$54,579, an average price of \$28.786 per skin; the net proceeds were about \$50,950. Taking into consideration the extremely unsettled condition of the general fur trade of the world and the rather poor quality of the skins as a whole, the outcome was regarded as satisfactory. The sale was attended by many buyers from Europe and America and attracted much attention.

It is a pleasure to refer to the efficient patrol of the North Pacific Ocean and Bering Sea maintained by vessels of the Revenue-Cutter Service throughout the season when pelagic sealing operations are possible. These vessels incidentally render an invaluable service to the Department by transferring officials and mail to and from the seal islands, and by transporting limited quantities of supplies.

The fur-seal question has continued to be a subject of public discussion, but the Department is not involved therein, except in so far as it has been criticized for the rigid enforcement of the law and for the exercise of its discretionary power over the killing of seals for the use of the natives in accordance with the evident spirit of the law. No question whatever relative to the merits or demerits of the existing close-time law has been presented to the Department by either Congress or the President, and no action in regard to the abrogation or modification of that law has been incumbent on the Department up to this time. In the very short period that has elapsed since the law went into operation and its effects could be gauged, the full duty of the Department seems to have been performed by ascertaining and publishing the facts as to the recuperation of the herd.

In the latter half of the fiscal year, and two years after the suspension of pelagic sealing, the Department determined to undertake an exhaustive inquiry, under competent jurisdiction, regarding the condition of the herd, the effects thereon of the sealing convention and the law of August 24, 1912, giving effect thereto, the operation of the close-time feature of that law, and the entire subject of the relations and the responsibility of the Government toward the seals, foxes, and other animals of the Pribilofs as well as toward the native inhabitants of the islands.

The primary object of this inquiry was to provide the Department with data on which could be based such representations to Congress as the facts demanded. It was obviously the proper course of procedure to employ for this purpose persons who were

not involved in the seal controversy that has been waged with little intermission since 1890. The desire of the Department to obtain information through new agencies implied no criticism of previous instruments but rather a belief, based on assurances from various sources, that a new viewpoint would be welcomed by everyone concerned and would be approved by all persons interested in seeing the facts established.

Accordingly, on the recommendation of the Commissioner of Fisheries, arrangements were made for the nomination of three specialists not connected with the Department, not previously concerned with the fur seals, and selected by outside agencies for the particular inquiries in hand. In compliance with my request to the Secretary of Agriculture that he designate a duly qualified person versed in the breeding and other habits of wild and domestic animals to serve as a special assistant of the Department, Mr. Edward A. Preble, of the Bureau of Biological Survey, was named. The Secretary of the Smithsonian Institution was asked to make a similar nomination, and selected Mr. Wilfred H. Osgood, of the Field Museum of Natural History, Chicago. For a nomination of a third person, the President of the United States invoked the National Academy of Sciences, which submitted the name of Prof. George H. Parker, of Harvard University. These gentlemen were duly appointed special assistants of the Department, were given individual and joint instructions, and were sent to the seal islands on a revenue cutter sailing from Seattle early in June, 1914. It was planned to have these specialists remain on the grounds until the latter part of August, so that they might become personally familiar with the fur seals during all critical stages of their land life.

Shortly before the departure of these assistants the Department was advised that the British and Japanese Governments desired to send experts to the seal islands to observe the condition of the herd, and steps were at once taken to provide transportation and other facilities. The two representatives of Great Britain were cared for on the vessel that carried the American agents, and the Japanese expert, arriving in Seattle early in July, was taken to Unalaska in a regular passenger steamer, and transferred thence to the seal islands in a revenue cutter.

Detailed reports are expected from the Department's agents at an early date. Meanwhile, it may be stated that they found the seal herd in excellent condition, having undergone a noteworthy increase since 1913. It was on the recommendation of these

agents after they had studied the situation that the take of seals for the use of the natives was fixed at 4,500 for the season.

In the summer of 1914 the Department was apprised of the existence on the seal islands of social conditions highly prejudicial to the interests of the Government and natives. An investigation was at once ordered, and steps were immediately taken to correct the abuses, which are largely the result of administrative laxity of long standing.

Minor Fur-Bearing Animals of Alaska.

In the winter of 1912-13 the Government herds of blue foxes on the seal islands yielded 436 pelts, which were shipped to St. Louis and sold at public auction on the occasion of the fur-seal sale. The gross amount received therefor was \$17,552.

At the beginning of the fiscal year the Department was greatly embarrassed in its efforts to administer the law for the protection of the fur-bearing animals of Alaska by a defect in the appropriation act, consisting of a failure to make any provision for carrying on the work of the wardens. In a later deficiency act a certain sum was made available for this purpose, and the wardens continued actively in the field during the remainder of the fiscal year. A number of cases of violation of law were successfully prosecuted.

The recent noteworthy movement looking to the rearing of fur-bearing animals in captivity, which has been especially successful in the case of foxes, has led to numerous requests from Alaska for permission to take animals alive in the close seasons. Careful consideration was given the matter, and it was decided that the proper development of fur farming in Alaska demanded some modification of the close-time regulations. Accordingly, in the revised regulations issued under date of June 22, 1914 (Department Circular No. 246, second edition), provision was made for the taking of foxes, marten, mink, and land otter for breeding purposes during a part of the prescribed close time. In order that the Department may keep thoroughly informed regarding this new phase of the fur industry and prevent the abuse of the privilege of taking animals at a time when killing is prohibited, it is now required that all persons engaged in the business of rearing fur-bearing animals in Alaska shall first obtain a license; furthermore, a permit is required before such licensed fur farmers may ship their stock outside of Alaska.

Many permits affecting fur-bearing animals have been issued by the Department during the year, among them 31 permits to 16 persons and firms authorizing the shipment of 910 ranch-bred foxes.

The injurious effects of the eruption of Katmai on the animal life of the Afognak Reservation are well known. In view of the growing scarcity of foxes and land otters therein, it was deemed necessary to establish an absolute close time for a series of years. Accordingly, under date of October 29, 1913 (Department Circular No. 252), it was ordered that the pursuit, capture, or killing of foxes within the reservation should be prohibited until November 16, 1918, and of land otters until November 16, 1915.

Under the authority of law, the Department has offered for lease for fox-breeding purposes, for periods of five years, 12 islands lying off the Alaskan coast. In response to a circular announcement issued in 1913, bids for two islands, at \$205 and \$200 per annum, were received and accepted. A second announcement, dated January 1, 1914, inviting proposals for leasing the remaining 10 islands, resulted in bids for 3 islands at \$200, \$205, and \$250 per annum, which will probably be approved. The offer of the Department to supply blue foxes for breeding purposes from the herds on the Pribilof Islands evoked a number of competitive bids, the highest being \$151 apiece for selected animals. Some deliveries have been made, but the plan presents a number of difficulties connected with the shipment and care of the foxes.

The present general law for the protection of fur-bearing animals in Alaska has proved quite inadequate in some respects. One serious defect is that its prohibitions apply only to the actual killing of animals, leaving the Department powerless to check operations of various kinds quite as detrimental as killing would be. The Department should have full and broad authority for regulating the capture of fur-bearing animals, so as to make hunting and trapping out of season illegal, to prevent the unlicensed destruction of burrows and the taking of young under circumstances that inevitably result in large mortality, and to permit the Government to adopt such other procedures as are generally recognized as necessary for the proper protection and conservation of the valuable fur resources of the Territory.

Custody over the terrestrial fur-bearing animals of Alaska, which is now imposed by law on the Bureau of Fisheries, is an uncongenial, incongruous duty entirely foreign to the proper functions of that Bureau. The legitimate activities of the Bureau

require the undivided attention of the staff, and I therefore sympathize with the attitude of the Commissioner of Fisheries toward this matter and approve his recommendation for the transfer of this service to some other Government agency, preferably the Bureau of Biological Survey of the Department of Agriculture, which already has jurisdiction over certain of the animals of Alaska and is fully organized for administering all matters connected with the fur-bearing animals at large. The Department should continue to exercise control over all the fur-bearers whose pursuit constitutes a fishery; and, in addition thereto, it should have authority over the walrus, which at present comes under the jurisdiction of the Department of Agriculture.

Meanwhile, however, the Department is endeavoring to promote the fur industry of Alaska in every feasible way; and it favors the speedy enactment of legislation that will correct defects in existing law and will exemplify the Department's policy for the preservation of the wild stock (which must for a long time constitute an important means of livelihood to many people in Alaska) and for the building up of an additional fur industry through the domestication and cultivation of fur-bearing animals under private auspices.

Miscellaneous Matters.

The Aleutian Islands Reservation.—Under the Executive order of March 3, 1913, creating the Aleutian Islands Reservation, the Secretary of Agriculture and the Secretary of Commerce have issued joint regulations for the administration of the reservation, effective March 15, 1914. Under these regulations "all matters pertaining specifically to the fisheries and all aquatic life, and to the killing of fur-bearing animals, will be under the immediate jurisdiction of the Department of Commerce," while various other matters come under the joint jurisdiction of the two Departments.

Fishery matters in Congress.—Fishery legislation of unusual importance was considered at the second session of the Sixty-third Congress, and the Department was called on for reports on numerous measures and testimony before committees of the Senate and House.

A bill which marked a wide departure in Federal fishery legislation provided for national control over migratory fishes which do not pass their entire life within the jurisdiction of a given State. Extended hearings on the measure were given by the House Committee on the Merchant Marine and Fisheries, but no further action has yet been taken.

No legislation has as yet been enacted to give effect to the treaty of April 13, 1908, providing for joint international regulations governing the fisheries in the contiguous waters of the United States and Canada. As long ago as 1910, the Canadian Government adopted the regulations made under the treaty, but opposition developed in Congress, and the entire matter had lain dormant in the United States since 1911. In 1913 a new international fisheries commissioner on behalf of the United States was appointed, and the matter was reopened with a view to securing some action by Congress which would permit the Federal Government to enforce a system of protection for the food and game fishes in the waters of our northern boundary. The Senate passed the necessary bill in March, 1914, and the Committee on Foreign Affairs of the House, after a number of hearings, made a favorable report, but final action has been delayed.

In the act making appropriations for the fiscal year 1915, the following limitation is placed on the sum provided for the propagation of food fishes:

No part of the foregoing amount shall be expended for hatching or planting fish or eggs in any State in which, in the judgment of the Secretary of Commerce, there are not adequate laws for the protection of the fishes, nor in any State in which the United States Commissioner of Fisheries and his duly authorized agents are not accorded full and free right to conduct fish-cultural operations, and all fishing and other operations necessary therefor, in such manner and at such times as is considered necessary and proper by the said commissioner or his agents.

This important legislation, which is heartily approved by the Department, will necessarily conduce to increased efficiency of the fish-cultural operations and should lead to much needed cooperative efforts on the part of the States.

Cooperation with other departments.—In connection with investigations carried on by the *Fish Hawk* in Chesapeake Bay and tributaries in the winter and spring of 1913-14, facilities were furnished to the Department of Agriculture for making a sanitary examination of the oyster beds.

Arrangements have been made with the Department of the Interior and the Department of Agriculture whereby the Bureau will hereafter systematically supply desirable fishes for stocking the waters of national parks and forestry reservations. The work will be conducted on a large scale and will cover a definite period of years, in the expectation that the attractiveness of the parks and reservations to the general public may be increased by the fishing facilities.

A large number of samples of foreign and domestic fishery products have been submitted to the Bureau by the Bureau of Chemistry of the Department of Agriculture. These have been examined and identified, and reports thereon prepared with reference to the application of the food and drugs act.

Pacific coast branch.—In order to maintain more intimate relations with the important fishery interests on the Pacific coast with which the Bureau has to deal, a branch office was established in Seattle near the close of the fiscal year. This will be the headquarters for the fishery, fish-cultural, and other branches of the work; and should result in increased efficiency and economy, more particularly in the matter of the purchase of supplies for the Alaska service and for the numerous hatching stations in the Northwest. It is proposed to place the office in charge of an experienced assistant, and to make it a center for the collection and dissemination of information regarding all fishery matters pertinent to or of practical interest to the Pacific States and Alaska.

Maine lobster conference.—In view of the importance of the lobster industry of Maine and the activities of the Bureau in relation thereto, a conference was held in January, 1914, at the office of the Commissioner of Fisheries for the purpose of announcing the attitude of the Department toward certain features of the work and of learning the views of the State fish commissioner, lobster fishermen, and lobster dealers, all of whom were represented at the conference. The governor of Maine and the State delegation in Congress were also present. The proposed new policy of the Department, under which the expenditures for lobster culture will be more direct and effective, was unanimously approved.

Pollution of waters.—The Bureau is not provided with the necessary means of performing its duties with respect to the pollution of lakes and streams. It has, however, made what effort it could, and in cooperation with the Illinois Natural History Survey contributed to the study of the discharge from the Chicago Drainage Canal. This investigation, the results of which were published by the State of Illinois during the past year, yielded data of great importance and of application to other streams carrying large quantities of domestic and municipal sewage.

Complaints that oil refineries and tank steamers were polluting the Delaware River to the detriment of the fisheries were investi-

gated, and some ill effects were apparently to be found, but the season was not advantageous for accurate determination. The presence of the oil was thought to affect the salability of the fish rather than their movements and distribution.

The discharges from the Government powder factory at Indian-head, Md., upon investigation were found to be toxic, and the Secretary of the Navy, upon request, took measures to remedy conditions complained of, although no positive injury to fish was disclosed.

Utilization of neglected aquatic products.—Continuing its efforts to establish a market for certain very wholesome but now unutilized products, the Bureau has conducted a special publicity campaign in behalf of the sea mussel. Through the press and otherwise, it was possible within a few months to establish this new sea food upon the menus of over 70 hotels, restaurants, and clubs of Boston, and retail dealers were induced to offer mussels for sale under placards bearing the Bureau's indorsement. There was also issued and widely distributed by the Bureau a circular, describing sea mussels, explaining their excellence and cheapness, and giving a number of tested recipes for cooking them. This propaganda was so successful in various Massachusetts cities and towns that the campaign will be extended to other parts of the country. Canned mussels are a highly satisfactory product available to the inland public.

Efforts to create a market for the dogfish have been of slow progress because of the prejudice against the fish, and success will apparently depend upon securing legislation enlarging the Bureau's authority.

Fish culture on the farm.—The Bureau believes that in sections of our country an acre of water can be made as productive of food values for the farmer as an acre of land. With this in view it is encouraging farmers to use small ponds that may exist upon their land or to create such ponds. The Bureau will stock them with food fishes suitable for the locality, providing these without expense and instructing the farmer in their care. In this way an additional food supply is being provided in many portions of the country.

Alaska inspection.—In the spring of 1914 Dr. E. Lester Jones, Deputy Commissioner of Fisheries, was instructed to proceed to Alaska and make an inspection in that great territory of the conditions affecting the work of the Bureau. From this trip he

has but just returned and his report had not been received when this was written. It is known, however, that a mass of information has been collected and many photographs have been taken which will throw a flood of light upon Alaskan conditions.

Dr. Jones was fortunately near at hand when conditions arose upon the Pribilof Islands requiring immediate investigation. He took charge of that inquiry and conducted it with care and promptness to a satisfactory conclusion, which has resulted in marked improvement in official and social relations upon the islands. The Department, however, believes that it is essential for the security of the Government property and the maintenance of order and law upon the islands that there should be an officer of more authority than has heretofore been available. A request will therefore be made to Congress for authority and an appropriation for a superintendent of the islands who can be directly responsible for all the conditions there. In view of the fact that there is Government property to the potential value of many millions on these islands, together with a community of some hundreds of souls, the necessity for such an officer would seem justified by theory, and experience has also shown that the need exists.

Urgent need for fish pathologist.—The Department has repeatedly requested from Congress authority to appoint a fish pathologist on the staff of the Bureau, and this request, though approved by the Senate, has always been rejected by the House of Representatives. It is difficult to understand why this should be refused. The Government does not hesitate to provide inspectors for meat, and the States provide for inspection of milk. Evidence has been placed before Congress indicating that diseased fishes may cause disease in human beings, and that in some cases there is a common cause of disease in human beings and fishes; and evidence is available showing also that diseases in human beings are transmitted through water to fishes, making them unfit for food. Yet an appropriation of \$2,500 to give this subject scientific thought is continuously denied. If this be on the ground of economy, it can only be justified on the theory that dollars are worth more than lives, which I imagine the people would hardly approve should the facts be brought home to them.

The Department takes this occasion to say that a pathologist for studying the diseases of fishes is an urgent necessity in the interest of the fish-cultural work and of the public, and that

since the Department is not permitted to make this inquiry it must not be held accountable for large avoidable losses of valuable fish or for diseases that occur through unknown causes arising from fish life.

BUREAU OF LIGHTHOUSES.

The reorganization of the Lighthouse Service under the provisions of the act of Congress approved June 17, 1910, was entirely completed during the early part of the fiscal year 1913, and continued to operate satisfactorily during the fiscal year 1914. All of the lighthouse districts, with the exception of the three river districts, are now in charge of civilian inspectors. It is believed that the efficiency of the Service has been increased by the reorganization and that the work is more economically performed, especial attention being invited to the fact that up to July 1, 1914, there has been an increase of 2,485, or more than 21 per cent, in the number of aids maintained over the corresponding number on July 1, 1910, while the total general appropriations for the support of the Service for the fiscal year 1915 are about \$320,000 less than those for the fiscal year 1911.

The general organization of the Lighthouse Service remains the same as described in the annual report for 1913.

On June 30, 1914, there were 5,562 persons employed in the Lighthouse Service, including 93 in the technical force, 143 in the clerical and office force, and 5,326 connected with depots, lighthouses, and vessels.

Administrative Methods and Economies.

A conference of lighthouse inspectors, authorized by me, was held for the first time in the history of the Service during February, 1914. A detailed synopsis of subjects for discussion, under the general heads of aids to navigation, administrative methods, construction work, apparatus and equipment, vessels, and similar topics was prepared and distributed in advance. The proceedings were entirely informal, and general minutes embodying the results of the discussion were subsequently sent to the various inspectors. A visit to the general depot closed the conference. The results are believed to be of great value in effecting a closer degree of cooperation and efficiency, as well as affording inspectors an opportunity for interchange of ideas and methods.

Systematic inspections were continued during the fiscal year in the various lighthouse districts by the general inspector, examiner,

and officers of the Bureau. The increasing value of this work in maintaining the Service at a high standard is shown in the results accomplished.

Revised instructions relative to making requisitions for office furniture, equipment, and supplies, in conformity with a revised manual issued by the Department on the subject, were issued during the year.

A general examination was made of library books furnished isolated stations and vessels, and instructions were issued for general improvement of them, including books for children where desirable.

An inquiry was made in reference to educational conditions for children of lighthouse keepers at such stations as are not readily accessible to ordinary school facilities, and arrangements made for systematic transfer of such keepers and consultation with local educational authorities when practicable.

A standard method of handling requests of lighthouse keepers for transfers was outlined, in order to insure equitable treatment of such employees and uniformity in the matter.

Permission was obtained from the Civil Service Commission for transferring keepers or employees from trades or mechanical positions to that of watchman in the Lighthouse Service under suitable restrictions as to eligibility.

New regulations governing the payment of medical and surgical, also of burial, expenses for nonstatutory employees were put into effect during the fiscal year. These provide for a maximum payment of \$100 for each object, under proper safeguards and restrictions.

Commutation of subsistence on lighthouse vessels, authorized by the act of August 24, 1912, and inaugurated last year, was gradually extended during the fiscal year, and at the close thereof all lighthouse vessels, including light vessels and tenders, were operated under this system with excellent results. In order to provide against any possible shortage in food supplies, reserve provisions consisting of meat and pilot bread in tins were prescribed for isolated vessels and stations in quantities suitable for the various complements and localities, and instructions issued for the proper consumption of such provisions in rotation; also for their replenishment and inspection at stated intervals.

Revised instructions governing the sale of condemned property, in accordance with the act of March 4, 1913, were issued. These

provide for sales under sealed bids, where desirable, and for more prompt forwarding of the gross receipts and for the payment of expenses of the sale from such receipts by the disbursing clerk of the Department.

Tentative arrangements were made for the exhibit of the Lighthouse Service at the Panama-Pacific International Exposition, to be held in San Francisco in 1915. Estimates of expense and lists of articles to be exhibited were prepared, and an allotment of \$4,750 was granted by the governing board from the appropriation made for the Government's exhibit. An examination of records was made to ascertain the nature and number of lighthouse articles of historical interest which might be of value to the exhibit.

The order of the Postmaster General increasing the limits of weight for mail matter transmitted by parcel post within certain zones to a maximum of 50 pounds was put into effect in the Lighthouse Service and has proven advantageous in shipping many small articles of supply.

With a view to avoiding any delay in the business of the Service, a form showing the nature and mailing dates of various routine reports required was prepared and distributed, and in the accomplishment of the same purpose a standard form of follow-up letter to be used in case of delayed replies was also devised.

The publication of the monthly Lighthouse Service Bulletin, describing the principal events in the Service of interest and importance to officers and employees, was continued throughout the year. The publication of this bulletin was commenced in January, 1912.

The study of the most useful size and arrangement of light and buoy lists was continued, and consideration given to efficient and ready methods of keeping copy for the printer corrected to date, in order to prevent delays in publication. Toward the close of the fiscal year arrangements were made for printing buoy lists in octavo size, which it is believed will extend the usefulness of the publications by providing the information in a more compact form and at lessened cost.

A new edition of the regulations, embodying all changes and amendments made in the former edition of 1911, was issued on October 1, 1914.

A standard method of cost keeping has been continued in effect throughout the fiscal year, and reports have been received from

all the districts, in which itemized costs of each office, depot, light and fog-signal station, tender, and light vessel are shown separately. Beneficial effects of this systematic method of keeping costs have been shown by a gradual reduction in the cost of maintenance of a number of classes of aids to navigation as compared with figures for previous years.

There has been increasing difficulty in obtaining competent seamen and other members of crews for lighthouse vessels in recent years, and as a result lighthouse tenders engaged in important buoy work have not been able, in some cases, to maintain a full crew, or have had their crews made up largely of inexperienced men. A table showing the authorized complements of seamen, firemen, and mess attendants on board lighthouse tenders, with the number of changes that have taken place in such positions during the fiscal years 1913 and 1914, is appended, which indicates clearly the difficulties encountered in attempting to do the work of the Lighthouse Service under the present scale of wages for these persons.

APPROXIMATE NUMBER OF CHANGES OCCURRING AMONG AUTHORIZED COMPLEMENTS OF SEAMEN, FIREMEN, AND MESS MEN ON LIGHTHOUSE TENDERS DURING THE FISCAL YEARS 1913 AND 1914.

District.	Tender.	Seamen.			Firemen.			Mess men.		
		Authorized complement.	Changes.		Authorized complement.	Changes.		Authorized complement.	Changes.	
			1913	1914		1913	1914		1913	1914
1st.....	Hibiscus.....	7	27	22	6	23	12	4	5	3
	Zizania.....	6	8	0	4	17	22	4	1	4
2d.....	Anemone.....	7	17	19	6	23	23	4	5	4
	Azalea.....	6	9	9	4	8	1	4	3	1
	Mayflower.....	6	44	18	6	10	10	4	5	8
3d.....	Daisy.....	2	3	2	1	1	0	1	2	4
	Cardenia.....	6	21	42	2	5	11	3	5	13
	John Rodgers.....	6	21	14	4	7	9	4	4	1
	Larkspur.....	6	14	19	6	10	5	4	6	16
	Mistletoe.....	6	18	48	4	4	6	4	7	13
	Pansy.....	6	7	8	4	3	4	4	5	16
	Tulip.....	8	25	11	6	33	13	4	13	21
4th.....	Iris.....	6	35	25	4	8	6	4	2	1
5th.....	Holly.....	6	5	6	4	5	5	4	1	2
	Ivy.....	6	5	23	6	7	13	4	4	9
	Jessamine.....	6	11	10	4	5	4	4	5	0
	Juniper.....	2	1	3	2	0	6	1	1	0
	Maple.....	6	6	19	6	15	27	4	0	4
	Orchid.....	7	16	14	6	33	17	4	8	12
	Woodbine ^a	2	.....	3	.....	.....	.....	1	.....	2

^a Not in commission during fiscal year 1913.

APPROXIMATE NUMBER OF CHANGES OCCURRING AMONG AUTHORIZED COMPLEMENTS OF SEAMEN, FIREMEN, AND MESS MEN ON LIGHTHOUSE TENDERS DURING THE FISCAL YEARS 1913 AND 1914—Continued.

District.	Tender.	Seamen.			Firemen.			Mess men.		
		Authorized complement.	Changes.		Authorized complement.	Changes.		Authorized complement.	Changes.	
			1913	1914		1913	1914		1913	1914
6th.....	Arbutus.....	6	16	28	4	25	17	4	8	4
	Cypress.....	7	30	29	6	12	21	4	4	0
	Mangrove.....	6	20	27	6	9	6	4	6	9
	Snowdrop.....	1	1	0				1	0	0
	Water Lily.....	1	1	2				1	0	0
7th.....	Magnolia.....	6	38	16	6	52	14	4	6	1
8th.....	Camellia.....	4	24	51	3	5	16	3	13	9
	Lilac.....	6	11	41	6	11	25	4	10	10
	Sunflower.....	6	17	15	6	7	11	4	8	5
9th.....	Myrtle ^a	6		11	4		5	4		0
10th.....	Crocus.....	^b 5½	32	31	^b 5½	45	48	^b 3½	7	8
11th.....	Amaranth.....	^b 5½	40	15	^b 3½	12	15	^b 3½	6	7
	Aspen.....	^b 3½	18	17	2	4	11	2	7	13
	Clover ^a	^b 3½		11	^b 1½		13	2		8
	Marigold.....	^b 5½	34	33	^b 3½	22	22	^b 3½	14	6
12th.....	Hyacinth.....	^b 5½	11	23	^b 3½	12	22	^b 3½	1	5
	Sumac.....	^b 5½	5	7	^b 5½	13	12	^b 3½	3	14
13th and 14th.	Goldenrod.....	6	15	6	2	3	2	4	34	15
15th.....	Oleander.....	6	18	12	3	10	6	4	15	9
16th.....	Columbine.....	7	52	19	6	3	6	4	20	27
17th.....	Heather.....	7	16	20	6	11	17	4	6	3
	Manzanita.....	7	22	19	6	24	26	4	17	9
18th.....	Madrono.....	7	11	13	6	16	6	4	13	21
	Sequoia.....	7	46	17	6	27	13	4	19	17
19th.....	Kukul.....	6	14	8	6	14	10	4	7	3
	Total.....	249½	785	786	191½	554	538	157½	306	336

^a Not in commission during fiscal year 1913.

^b Fractions result from members of crew being authorized for portion of year only.

Cooperation.

Special effort has been continued to consult the needs of maritime interests as to aids to navigation and to cooperate with other branches of the Government having interest in or relations with the work of this Service.

Cooperation with the United States Engineer officers in charge of river improvements in the river districts has been continued with entire success.

Cooperation with the Navy Department was extended by the promulgation of joint regulations dated January 20, 1914, gov-

erning repairs to vessels and obtaining of marine stores at navy yards and naval stations.

The facilities of Navy Department radio stations for the transmission of official radiograms, both from shore and vessel stations, were extended to the Lighthouse Service.

Arrangements were made with the Treasury Department for the detail of officers of the Public Health Service, when available, for inspection of the sanitary conditions and general health of employees at isolated stations and on vessels.

Joint regulations covering the lighting of fish pounds, to be included in permits which may be granted by the War Department for the erection of fishing structures and appliances, were issued during the year.

Arrangements were made to cooperate with the Department of Agriculture in enforcing the regulations for the protection of migratory birds approved by the President on October 1, 1913, by furnishing copies of such regulations to keepers and other employees and directing them to report violations promptly.

Instructions were issued to furnish the Department of Labor, at stated intervals, data regarding subcontracts on contract works of construction and repair in force in the Lighthouse Service.

Instructions cooperating with the Treasury Department for standard sizes and rules regarding towels used in public buildings were issued.

Arrangements were made for the recovery of valuable buoys adrift on the high seas by cooperation between the radio stations of the Navy Department and revenue cutters of the Treasury Department cruising in the vicinity of such drifting buoys.

Arrangements were made for cooperation with the Revenue-Cutter Service, Treasury Department, whereby wrecks discovered by that service on the Florida Reefs will be promptly reported to the proper lighthouse inspector, to permit issuing a notice to mariners in order that vessels navigating in the vicinity may not be misled as to their own positions.

Cooperation with the Bureau of Navigation, Department of Commerce, was also arranged, whereby vessels of that Bureau will notify the nearest lighthouse inspector, by radio when practicable, of any defects observed in aids to navigation.

Legislation Affecting the Lighthouse Service.

In addition to the maintenance appropriations for the current fiscal year, appropriations for the following special works have been made since the close of the year 1914:

Carpenter shop for the general lighthouse depot, Tompkinsville, N. Y.	\$23, 000
Completion of Kilauea Point Light Station, Kauai Island, Hawaii.	3, 000
Aids to navigation in Alaska.	60, 000
Aids to navigation at the entrances to the Cape Cod Canal, Mass.	50, 000

Authority was granted by the act of March 9, 1914, for the leasing of an unused portion of the Ediz Hook Lighthouse Reservation, Wash., to the city of Port Angeles, Wash., for a period of 99 years, with suitable restrictions and safeguards.

The act of May 26, 1914, authorizing the Secretary of War to grant the use of the Fort McHenry Military Reservation, Md., to the city of Baltimore for park purposes, contained a clause excepting that portion in use by the Lighthouse Service, with the electric pole line leading thereto.

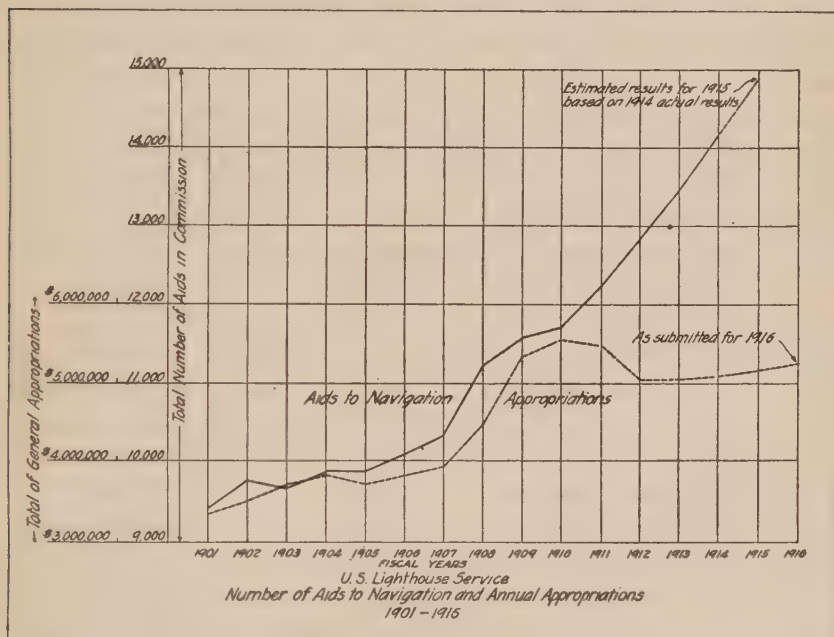
Appropriations.

The estimates for maintenance appropriations for the year 1915 were divided into one appropriation for general expenses of supplies, repairs, etc., and three appropriations for salaries, with a recommendation that consideration be given to the consolidation of all these appropriations into one. This alternative proposition, however, was not authorized by Congress. It is believed that with this form of appropriation a more economical and efficient administration of the Lighthouse Service could be effected, and in the estimates for the next fiscal year attention has been drawn to the fact that, if this consolidation is authorized, a reduction of \$25,000 on the total estimates may be safely made.

Besides the estimates for maintenance, estimates for 27 special works have been submitted, aggregating \$1,493,500. These include—

- 2 new lighthouse tenders.
- 7 new light and fog-signal stations.
- 3 new light stations.
- 1 new lighthouse depot.
- 4 items for establishing or improving aids in general localities.
- 1 item for a new system of harbor or channel lights and other aids.
- 5 items for improvements of light or fog-signal stations or of groups of aids to navigation.
- 3 items for improvement of lighthouse depots.
- 1 item for light keepers' dwellings.

Special attention is invited to the fact that the appropriations for special works in the Lighthouse Service for the fiscal year 1915 total only \$136,000, while the average amount for the 10 preceding fiscal years was \$946,927 annually. Practically all of the items submitted are the same as those submitted last year, on which action has not yet been taken by Congress. These items are all considered meritorious and urgent for the safety of shipping, and have been requested many times by navigators and maritime interests. In view of the increasing growth of the commerce of



the country and the efforts now being made to extend it further, it is believed that these appropriations should be made at the next session of Congress.

Aids to Navigation.

During the fiscal year ended June 30, 1914, there was a net increase of 677 in the total number of aids to navigation maintained by the Lighthouse Service, including 59 lights above the order of minor lights, 1 fog signal, 2 submarine bells, 270 day marks, 65 lighted buoys, 157 unlighted buoys, and 88 minor lights.

Fixed lights were changed to flashing or occulting at 67 stations. The illuminant of 37 lights was changed to incandescent oil vapor, the illuminant of 25 lights was changed to acetylene, and the illuminant of 48 lights was changed to oil gas.

On June 30, 1914, there were maintained by the Lighthouse Service 14,198 aids to navigation, including 5,004 lights of all classes, and 567 fog signals, of which 48 are submarine signals. It is believed that the systematic methods of improvement and the use of modern apparatus in increasing the number and brilliancy of aids have been of value to the safety of commerce. Particular attention is invited to the fact that incandescent oil vapor is now used as the illuminant of 268 lights, embracing practically all the principal seacoast lights in the Service.

The following are some of the more important aids which have been established or materially improved during the past fiscal year:

Complete new and improved systems of lighted aids were established in Baltimore Harbor, Md., North Channel, Boston Harbor, Mass., and St. Marys River, Mich.

First-order lights changed to flashing or occulting: Cape Blanco, Oreg.; Cape Lookout, N. C.; Shinnecock Bay, N. Y.; North Head, Wash.; Cape Flattery, Wash.

Special improvements at Capes Hatteras and Lookout, N. C., included an increase in intensity and speeding up of the lens at Cape Hatteras, and the introduction of a three-mantle oil-vapor lamp with occulting screens to produce a more effective characteristic at Cape Lookout.

Horn fog signal established: Whatcom Waterway, Wash.

Fog bells established: Aunt Phoebe Rock, N. Y.; Fiddlers Reach, Me.; Sandy Point Breakwater, Conn.

Submarine bells added to existing gas and whistling buoys: Point Judith, R. I.; Manana Island, Me.; St. Johns Entrance, Fla.

Important gas buoys established: McCries Shoal, N. J. (whistle); Little Gull Bank, Md. (whistle); Cape Romain, S. C. (whistle); Charleston, S. C. (bell); Biscayne Shoal, Fla. (bell); Point Delgada, Cal. (whistle); Duxbury Reef, Cal. (whistle); Joe Flogger Shoal, Del. (bell); Blackfish Bank, Va. (whistle); Boulder Reef, Mich. (whistle); Molasses Reef, Fla.; Cortes Bank, Cal. (whistle); Cape San Blas, Fla. (bell); Point Partridge, Wash. (bell); Port Harford, Cal. (whistle); Port Inglis, Fla. (whistle).

Systems of minor aids and buoyage extensively rearranged or improved in important localities: Kennebec River, Me.; Cohasset Harbor, Mass.; New Bedford Harbor, Mass.; Providence River, R. I.; Lake Champlain, N. Y. and Vt.; Elizabeth River, Va.; inland waterway, S. C., Ga., and Fla.; Charleston Harbor, S. C.;

Savannah River, Ga.; St. Simon Sound, Ga.; Charlotte Harbor, Fla.; Anclote River, Fla.; Sturgeon Bay, Wis.; Prince of Wales Island, Alaska; Kuhio Bay, Hawaii.

Flashing gas lights established: Acetylene—Caines Head, Windy Bay, Pilot Rock, Woody Island, Point Elrington, Smith Island, Cape Spencer, Cape St. Elias, and Point Ellis, Alaska; Sandy Point Breakwater, Conn.; Great Kills, N. Y.; Newark Bay, N. Y. and N. J. (4 lights); Fishing Point, Va.; Fort McHenry, Md.; Cape Fear River, N. C. (2 lights); Eastern Triangle, Fla.; Galveston Bay, Tex.; Ludington North Breakwater, Mich.; Kewaunee, Wis.; Port Wing, Wis.; Redding Rock, Cal. Oil gas—Recors Point, Mich.; St. Marys River, Mich. (45 lights).

The fiscal year was marked by an unusual amount of storm damage, the greatest loss occurring in the extremely severe storm of November 8, 9, and 10, 1913, on the Lakes, during which light vessel *No. 82*, on station in Lake Erie about 13 miles southwest of Buffalo, N. Y., was lost with her entire crew of six men. This is the second instance in the history of the Lighthouse Service in which a light vessel has foundered on station, the previous occurrence being on August 23-24, 1893, when light vessel *No. 37* was lost on Five-Fathom Bank, N. J., with four out of six men on board. Search was immediately instituted for light vessel *No. 82*, but the almost continuous heavy weather which prevailed from the date of the storm to the close of navigation in December prevented favorable results. In the meantime sufficient wreckage, including both small boats, doors, portion of vessel's rail, etc., drifted ashore as to preclude any hope for the safety of the crew. The search was resumed with the cooperation of the United States Lake Survey, using a wire drag, as soon as weather and ice conditions permitted in the spring, and on May 9, 1914, the wreck was located about 2 miles northeast of her station in 63 feet of water. The hull was found apparently intact, though the interior appeared badly damaged. No bodies were found. Bids were invited for raising the vessel and delivering her afloat in Buffalo Harbor, and a contract was let as soon as practicable. The work was in progress at the close of the fiscal year.

In addition to the loss of the vessel, valued at \$50,000, damage amounting to about \$15,000 was done to various light stations and vessels in the Lake districts by the same storm.

Other noteworthy storms were the hurricane of September 2 and 3, 1913, in the North Carolina Sounds, which destroyed about 20 post lights and damaged other lighthouse property at a

total loss of about \$6,000, and the storm of November 29, 1913, on the north Pacific coast, which damaged lighthouse property to the extent of about \$11,000. No lives of persons in the Lighthouse Service were lost in either of these storms.

In accordance with the plan outlined in the annual report for 1913 for distinguishing light vessel stations, international code-signal letters have been assigned to the various stations.

A further improvement in the standard form of Notices to Mariners was effected by printing, in the back of each weekly notice, a list of corrections affecting the light lists, arranged in the tabular form of the lists, for greater convenience in correcting the lists by clipping and pasting.

Amendments to the Regulations for Lighting Bridges were approved by the Secretary on April 29, 1914, and steps were taken at the close of the fiscal year for the printing of revised regulations embodying such amendments, which have the effect of making the regulations more flexible, conforming to new conditions which have arisen.

To insure more complete uniformity in the buoyage of the Service, arrangements were made for reporting spare gas buoys at regular intervals, as well as statistics showing the number, locality, and reasons in the cases of buoys not relieved each year. Instructions regarding the painting of striped buoys were also under consideration at the close of the fiscal year.

Alaska.

The total number of aids to navigation in Alaska, including lights, fog signals, buoys, and day marks, in commission at the close of the fiscal year ended June 30, 1914, was 319, including 108 lights, representing an increase of 71 lights since June 30, 1910, or nearly 200 per cent. The table following, which gives the total number of aids to navigation on June 30 of each year named, illustrates the progress in establishing aids in the Territory.

Aids.	1910	1911	1912	1913	1914
Lights.....	37	71	85	93	108
Fog signals.....	9	10	10	10	10
Buoys.....	84	105	132	136	157
Day marks.....	30	29	38	40	44
Total.....	160	215	265	279	319

The act of October 22, 1913, made an appropriation of \$115,000 for a light and fog-signal station at or near Cape St. Elias. On account of the late date in the season, no work was practicable until the season of 1914. A temporary light was established at Cape St. Elias on June 18, 1914, and preliminary survey made for the permanent station.

The act of August 1, 1914, appropriated \$60,000 for the establishment of aids to navigation and the improvement of existing aids in Alaska, and in order to take advantage of the comparatively short season, a study was made, prior to the passage of the bill, for the best utilization of these funds for additional aids in Alaska, so that within a few weeks after the act was approved it was possible to make arrangements for the establishment of 19 new aids which are all greatly needed.

The paramount need of the Lighthouse Service in Alaska is the estimate for an appropriation of \$250,000 for a new tender to replace the *Armeria*. This item appears as No. 1 in the Department's estimates for the fiscal year 1916. The *Armeria* was wrecked on May 20, 1912, by striking a submerged, uncharted pinnacle rock having but 15 feet of water over it. This rock was subsequently located with difficulty and found to be very steep on all sides, the depth dropping quickly to 5 and 6 fathoms, and it was estimated that the summit was about 3 feet square. There is in the Lighthouse Service no tender permanently assigned to Alaska. The *Columbine*, which is now serving there, was borrowed from another district and is needed where she belongs. Furthermore, she is not large enough to do the Alaska work adequately or to be entirely safe for the long voyages and unfavorable weather conditions. In connection with the establishment of the light and fog signal at Cape St. Elias, for which an appropriation was made by the act of October 22, 1913, a large lighted buoy is needed to mark the very dangerous southeast rock. A buoy suitable for this service weighs nearly 14 tons, and the maximum lifting capacity of the tender *Columbine* is less than 7 tons, so that the establishment of this much needed aid must be postponed until a vessel of sufficient size to do the work efficiently is provided. The request for authority to enlarge the proposed new tender to a vessel costing \$325,000 as compared with \$250,000 was made for the following reasons: The Government is charged with the responsibility of providing supplies for the natives and other inhabitants of the Pribilof Islands. These supplies include over 500

tons of coal annually and a thousand tons of hay, grain, lumber, and all other stores and merchandise needed for the support of a community of some hundreds of souls.

The transporting of sealskins is also a matter which could be accomplished on the return trip of the vessel. Even with the present closed season enough seal and fox skins are obtained to make a value during the past year of \$72,000. In four years the hire of private steamers cost over \$83,000 for this work, which might be all done by the proposed new tender at a trifling cost by being made a normal part of her outward and inward trips.

It should also be borne in mind that the distances in Alaska are great. From Ketchikan to Unalaska along the coast is 1,400 miles; to Bristol Bay and the Yukon district is still farther. A vessel is needed of sufficient size, not only to keep the sea in rough weather and do her work, but also to have a coal supply sufficient to avoid making duplicate trips back and forth, and also to enable her to carry supplies sufficient for the entire coast, when it shall be fully lighted, without having to return and take a second cargo for lack of carrying capacity. It is also believed that the proposed vessel fitted with modern oil-burning engines would cruise under ordinary conditions at reduced speed with little additional operating cost over the vessel originally authorized. If a smaller vessel is furnished, with less fuel and cargo capacity, it is apparent that there would be an early need for a second ship in order to cover the district of Alaska, in which the coast line requiring protection is greater in length than the entire Atlantic and Pacific shores of the continental United States.

Engineering and Construction.

New works of principal importance under special appropriations completed during the fiscal year are as follows: Storehouse for oil, Woods Hole Lighthouse Depot, Mass.; Newark Bay lights, N. J.; Negro Point Light and Fog Signal, N. Y.; Buffalo Breakwater, North End Light and Fog-Signal Station, N. Y.; Sand Island Light Station, Ala., protection by riprap; San Juan Depot, P. R., improvements; St. Marys River, Mich., lights; 38 isolated oil houses at light stations, and a dwelling for the keeper at Kauhola Point Light Station, Hawaii, were also completed.

Other important work in progress at the close of the fiscal year includes Rondout, N. Y., light and fog signal; Miah Maull Shoal, N. J., light and fog signal; Brandywine Shoal, Del., light and fog signal; Thimble Shoal, Va., light and fog signal; Atchafalaya

Entrance Channel, La., aids to navigation; Galveston Jetty, Tex., light station; Navassa Island, West Indies, light station; Ashtabula, Lorain, and Cleveland, Ohio, light stations; Ashland, Wis., light and fog signal; Manistique, Mich., light and fog signal, and Cape St. Elias, Alaska, light and fog signal.

In continuation of the work of developing standard plans and specifications for minor structures, designs were completed for iron substructures on four, seven, and nine reinforced concrete piles, with specifications covering their construction and erection.

A new type of portable acetylene tank house has been built for use on pile dolphins where there is danger of the dolphin being damaged by collision or carried away by the ice. These houses are so constructed that they may be readily removed, with all gas apparatus, and are furnished with a float on a length of light chain, to mark the locality for grappling in case the structure is swept away.

The use of concrete in beacon structures has been further extended with success. Concrete beacons previously built in place of old wooden cribs have stood heavy ice with success, and several more have been built during the past year. New concrete veranda roofs have been installed at light stations and have proven far superior to the sheet-steel construction formerly employed. In cases of destruction of tall wooden tripods by the sea, these have been replaced with strongly braced reinforced concrete structures.

Improvement of Apparatus and Equipment.

As a result of the tariff reductions effected by the act of October 3, 1913, a lower scale of prices was effected on various types of imported apparatus.

Careful attention was given at the general lighthouse depot, Tompkinsville, N. Y., to the manufacture and standardization of many articles, and substantial savings were effected in the cases of various parts heretofore purchased from manufacturers.

Improved post lanterns, both one-day and eight-day types, were made up and are being put into service. Drawings showing the design and detail price lists were also prepared. Special care has been given to the production of a wind-proof lantern, which has been tested for months through many severe gales without the light blowing out.

A new type of oil-engine torch, generating an intense heat and permitting the starting of internal-combustion kerosene engines in six minutes from the time of commencing to heat up the torch,

was manufactured at an economical cost. This quick-starting feature is of value in the event of sudden fog.

An experimental installation was made of concentrated filament electric lamps in parabolic reflectors for range-light purposes. The apparatus is so arranged that it may be run either by commercial current or storage batteries, and in the event of the failure of one, the other is automatically cut into circuit; also in case of the failure of a lamp, a duplicate is automatically lighted.

In several other localities where a reliable supply of current is available the use of electric lighting has been extended. These are in general equipped either with automatic duplicating devices for substituting new bulbs on the failure of a filament, or relays which operate signal bells and lights in the keeper's quarters in case of any trouble. In some cases storage-battery auxiliaries have also been provided. New types of reflectors, made of glass with reflecting surface on the back, have also been placed in service.

Arrangements have been made for installing small plants at lighthouse depots for cleaning buoys, by means of oil engines, air compressors, with tank, piping, and air tools, as it has been shown by experience that this method is preferable to cleaning by hand, the work being done better, in less time, and with less injury to the metal.

An acetylene fog gun was imported and installed at a light station for service test toward the close of the fiscal year. Mariners have been requested to report their opinions as to the practical efficiency of the device.

Arrangements have been made for the experimental installation of temporary unwatched acetylene lights for winter use at certain isolated stations on the Great Lakes, which, if successful, will permit the keepers to leave such stations under safer conditions and yet give service to belated mariners after the close of the regular navigation season.

The use of thermostat alarms designed to call keepers when the light burns either too high or too low has been continued with success.

The use of a new type of compound quick-opening whistle valve for fog signals has been extended, resulting in improvement of the signal and saving of compressed air formerly lost by leakage in older types.

Vessels.

Contract was awarded on September 9, 1913, for the medium-draft lighthouse tender *Laurel*, for service in the fifth lighthouse

district. The vessel was launched at Baltimore, Md., on June 24, 1914, and will probably be completed during the present fiscal year.

Contract was awarded on April 17, 1914, for the small tender *Fern*, for service in the inside waters of the sixteenth lighthouse district (Alaska). The contractors began the assembling of materials shortly after the close of the fiscal year.

The tender *Woodbine*, propelled by an internal-combustion kerosene engine, was placed in commission in the fifth lighthouse district on March 1, 1914.

The continuance of the plan of systematic docking, painting, and minor repairs to tenders during the year has resulted in higher efficiency and better maintenance.

The construction of new light vessels *No. 96* and *No. 98* at Muskegon, Mich., was well advanced during the year. These vessels will be used on the Great Lakes. *No. 96* was launched on April 21, 1914, and *No. 98* on June 9, 1914. It is expected that both will be completed during the current fiscal year.

Plans are in preparation for the construction of first-class light vessels *No. 99* and *No. 100* and second-class light vessel *No. 101*.

In connection with the design of new light vessels consideration has been given to making all parts of such vessels readily accessible for cleaning, painting, and overhauling, which it is believed will effect a considerable economy in future repairs of such vessels.

Saving of Life and Property.

During the fiscal year 1914 services in saving of life and property were rendered and acts of heroism performed by employees of the Lighthouse Service on vessels or at stations on 124 occasions, a list of which is appended.

* * * * *

COAST AND GEODETIC SURVEY.

Extent and Efficiency of Service.

It has already been said that this is the greatest service of its kind in the world, and this is true. It has also been stated that the quality of its work is as high as its extent is vast, and this is also true. There are several times as many miles of coast in Alaska alone as in the entire United Kingdom of Great Britain and Ireland. The surveying and charting of the Philippines is by itself a far greater task than is imposed upon France on all her own marine borders in Europe. The surveying of the Hawaiian

Islands, of Samoa, Guam, and Porto Rico is a greater task than is that of like work upon the European coast of Germany.

* * * * *

It has been said that this service costs more than any other of the kind in the world. It ought to do so, for it is a vastly greater service than any other. It, therefore, should cost more, several times more, if we are to measure up to our plain duty in the matter.

If, however, this service were *relatively* to cost more than that of other lands, it would not be strange. No suggestion has ever been made that this is so, but if it were not so it would be surprising. No private business run under the conditions that have been forced upon this service could long exist. Its wonderful record of scientific achievement and practical value to our commerce has not availed to provide it in some respects with the ordinary means of efficient working. It has, indeed, invented and made instruments of precision of the highest value and produced apparatus and machinery of unique merit; but it is still forced, regardless of its services, to operate under conditions that would disrupt any less loyal body of men. It puts the nation to the blush that this great scientific service should operate under conditions which would in private business cause the discharge of the superintendent who allowed them long to continue. Let me be specific.

Inadequate Housing Accommodations.

It is a commonplace of industry to-day that unless the working force be well housed in buildings suitable for its work good results can not be had, and in no respect has the development of industry been more marked during the last decade than in the design and construction of efficient buildings. Congress has wisely recognized this in connection with the removal of the Bureau of the Census from its former wretched quarters to those they now occupy, whereby at once a direct saving was made in the annual outlay and an increased output of work secured, while the human factor, the employee, is permitted to work under righteous conditions.

With like wisdom Congress has provided for the Washington post office and the Bureau of Engraving and Printing, whose work is not more exacting than that required by the map-making processes of the Coast and Geodetic Survey.

Often heretofore has attention been called to the need for adequate accommodations for the offices and workrooms for the

Coast and Geodetic Survey. The principal building now occupied was originally built with the idea of converting it into a hotel. It was not intended for the use to which it is put. It is not suited to that use. It is a makeshift, and a bad one. It is insanitary, not fireproof, and the arrangement of the rooms is such as to prohibit the efficient conduct of the operations which have to be conducted therein.

By scrupulous care the old building is made to look fairly well, but with its machine shop and its drafting room broken up into separate small chambers, without direct connection and with the numerous floor levels that exist therein, it is hopeless to look for economical labor. The outlay of money to make it right would not be an expense, but an investment. Wise expenditure is here, as elsewhere, true economy.

What has been said about levels suggests the curious state of affairs which exists in this ill-assorted group of buildings. There are 16 different levels in the Richards Building, though it is but 6 stories including basement. There are 10 different levels in the Butler Building, though it is but 5 stories including basement. In the printing office are 7 different levels, and in the carpenter shop 3. In these days, when it is a commonplace that such conditions are to be avoided, this state of affairs can only be permitted to continue on the assumption that the waste it causes is either unknown or desired, or that the country lacks the means to correct it. The facts are now made known. The Department does not desire them to continue.

Not only is the main building, which was erected more than 40 years ago, not fireproof, but that in which the records are stored is little better. There is constant danger of the destruction of valuable records, of engraved plates, and of costly instruments by fire.

The walls of some of the buildings, after being twice condemned by the authorities of the District of Columbia, were shored up to keep them from falling. An appropriation of \$12,500 was granted during the current fiscal year to correct this condition and the plans for the repairs have been approved. The buildings have been the subject of a recent report by the Public Health Service. The officer making the inspection for that Service condemned the sanitary conditions of the buildings in strong but not exaggerated terms. With the exception of a few minor matters, which were immediately corrected, the conditions criticized are inherent in the

buildings and can not be remedied until adequate accommodations are provided.

It goes without saying that the making of charts requires the best of light. Ample, well-diffused daylight is essential in order to deal properly with the fine details which are a necessary feature of the work. One finds it hard to read maps without good light; how much more to make the same maps? In this important respect of light, and not only in this respect but in those of heating, ventilation, and proper arrangements for supervision, the whole building plant is out of date and discreditable to the Government.

Replacing of Unseaworthy Vessels.

Faulty, however, as the buildings are which the Coast and Geodetic Survey is forced to occupy, some of the vessels which it is required to use are even worse. It is a shameful thing to send officers of the United States to sea in such ships as the *Endeavor*, the *Gedney*, and the *McArthur*. To require the continued use of these ships is but little removed in wisdom from a policy which would refuse to build a modern battleship because the old *Constitution* was still in existence. With a loyal willingness to accept the dole handed them by a great Government, the service has continued these ships in use. It can do so little longer. By the time new vessels can be built to replace them it will be a grave question whether these ships can be sent to sea at all and whether the important work they do must not be stopped till safe vessels are provided. I have personally examined the three ships of which I speak—the *Endeavor* at Lewes, Del., the *Gedney* at Seattle, Wash., and the *McArthur* at Bremerton, Wash.

These ships have earned an honorable repose. I trust they may survive to get it without carrying with them ere it is gained the officers and crews whose misfortune it is to be continued in their use. If for a moment it were conceded, which it is not, that the Coast and Geodetic Survey was itself negligent and extravagant, there would still remain no reasonable excuse for the continued use of these ships. They are expensive luxuries, costing largely for maintenance, extravagant in the waste of time and fuel and likely to be even more extravagant in the waste of lives.

These old, obsolete ships, without wireless equipment and deficient in many modern appliances, can not be safely used except in protected waters. The expense of repairing them is great and becoming greater. The *Endeavor*, now working in sheltered

waters on our Atlantic coast, can not be sent to the Pacific, since she could not survive the voyage. The steamers *Gedney* and *McArthur*, while still employed on surveys in sheltered waters in the Pacific, are unfit for the service. These three steamers are, respectively, 52, 39, and 38 years old, are single-screw, single-cylinder, and single-boiler coal-burning vessels, without electricity for wireless or for lighting, without refrigerating plants, without condensers to make fresh drinking water, and with quarters such as were, indeed, permissible at a somewhat remote age in our marine development but which, like their other equipment, are now medieval.

The *Endeavor* is a relic of the Civil War and was built in 1862 as a Confederate gunboat. She cost \$20,467 in 1867. The main deck is about 2 feet above the water line and on it is built a light, wooden superstructure, which includes the entire space to the rail on both sides. In this inclosure are 12 square windows, 22 inches by 21 inches, 6½ feet above the water line, with ordinary one-eighth inch thick window glass. Although, with due regard for her venerable years, a fairly good sea boat when running head on, or before the wind, yet with her low freeboard and open gangways the main deck is more or less filled with water in a moderate sea, while a sea 4 or 5 feet high will break over the bulwarks. With an ancient engine of a single-cylinder, keel-condensing type, such as sensible men everywhere else have long discarded, the *Endeavor* will at full speed, under favoring conditions, make 8 knots per hour. With a head wind and a seaway, however, she will at full speed not exceed 5 knots per hour. In a heavy sea, such as is common along our shores, she will make little or no headway at all.

The vessel is 111 feet long, 18½ feet wide, and draws, loaded, 8½ feet of water. Because of her superstructure, with the boats thereon, with such a narrow beam, the vessel is top-heavy, and if caught outside in bad weather she has neither speed nor power to make a harbor. It is doubtful if in half a gale of wind she has power enough to keep head to the sea. The afterhouse, inclosing the cabin and wardroom, will not stand much battering and the windows therein have been smashed by a moderately heavy chop sea, such as is common in Chesapeake Bay.

It seems needless to say that this ship has no modern conveniences. None of these vessels has. Her quarters are both

inadequate and insanitary. The officers are crowded in an open wardroom, used alike for sleeping, eating, and living, with the lavatories in the same room. They are without a bathroom.

The crew of 15 men must live, eat, and sleep in an open space 29 feet long by 13 feet wide by 6¼ feet high. This is ventilated by a hatch and two small pipes, one on each side. There are no windows. The hammocks hang directly over and a little above the table from which the men eat. Four petty officers are quartered in two small staterooms on the main deck and two men sleep in the shaft alley.

I protest, in the name of ordinary decency, against being obliged to continue such a vessel in service.

The storage room for the ship's supplies, provisions, and fresh water is entirely inadequate for convenience, for health, and for economy. The average annual cost for repairs to this vessel during the last 10 years has been \$2,123, a total of \$21,229.47, or 104 per cent of the original cost, in one-fifth of the time she has served. The same average amount will be required for repairs at the close of the present season's work.

She is quite as unfit as a working tool for the duty she performs as she is in other respects. She steers by hand. Her windlass is operated by hand. She is altogether an admirable example of what a vessel for this purpose ought *not* to be. If she were a living man instead of a dead vessel, she would be granted an honorable pension and sent to a soldier's home.

From this ancient and honorable veteran we pass to the steamer *McArthur*, which is one of the means the service has for the truly colossal task of surveying and charting the coast of Alaska. This vessel is 115 feet long, 20½ feet wide, and 12 feet draft loaded. She has a single-cylinder engine which, when conditions are good, will drive her 8 knots an hour at full speed, and against a moderate sea at 6 knots. She has not sufficient power to safely weather a heavy storm in open waters. The design and type both of engine and hull are long out of date. They were both built in 1874. The boiler was built in 1889 and was then designed for a pressure of 110 pounds. Its safe limit now is 80 pounds. The vessel's captain advises me that a similar hull equipped with a modern high-pressure boiler and engine would be propelled at a saving of nearly 50 per cent over the present motive power of the *McArthur*, but that the installation of modern machinery in the vessel is not justified in view of her great age.

The hull, like that of the *Endeavor*, was solidly built and is still in fair condition, but the deck of the superstructure is light and weak. This vessel has been used for 38 years, and during the last 10 years the average cost for repairs has been \$3,123, a total of \$31,234, or 56 per cent of the original cost, which was \$55,000. She has reached that stage, therefore, where in a quarter of her working life it has cost one-half of her original expense to keep her fit for service. Not less than \$2,000 will be required for repairs at the close of the present season's work. She is not in good condition for her service and should not be assigned to any duty where she will be subject to severe strains.

On this ship also officers live, eat, and sleep in an open ward-room, used also for an office and drafting room, and there is no bathroom. The ship has no electricity or evaporator to make fresh water and no refrigerating plant. Her storage and coal capacity are too small for work at a distance from supplies. The weak deck and superstructure have been strengthened by iron stay rods. She may hang together a while longer, but if in her duty she is caught suddenly in a heavy sea there is a good chance of her never coming back.

A few other details of the *McArthur* will show the generous(?) attention with which this service has been treated. One of the staterooms for petty officers on that ship is 8½ by 4 feet and contains two berths, which the boatswain and carpenter occupy. Another is 5½ feet by 11 feet and contains three bunks and a washstand. A third room is 12 feet by 5 feet and contains four bunks, and the fourth and last is occupied by the steward and the two cooks and contains three berths in a space 5½ by 7 feet. For the crew a washstand is provided with three basins for 18 men. There is no bath or shower either for the crew, the petty officers, or the firemen. There is no place to carry fresh meats or vegetables for the crew. When the crew have fresh meat it is hung over the windlass until it is used up.

The captain states that in surveying equipment the *McArthur* has always been deficient. She was built before launches were available and her superstructure is so frail that a suitable steam launch can not be hoisted on board. Consequently, as she must use a launch for surveying work, an anchorage has to be selected where the launch is safe overnight afloat because the ship is not strong enough to hoist it on board. Frequently, therefore, the launch is towed to a safe harbor in the middle of the night because

it can not be hoisted. Since it is impracticable to tow the launch long distances outside of sheltered waters, the *McArthur* is obliged, when making surveys at a distance, to go without her launch and resort to pulling boats. This increases greatly the cost of her work. A proper equipment for a vessel in this service would be two efficient steam launches. The *McArthur* has but one and that she can not hoist on board.

The last of this trinity of weaklings is the steamer *Gedney*. This vessel also we are required to use in Alaska, though she is dangerous when it blows. The *Gedney* is 140 feet long, 23¾ feet wide, and draws, loaded, 8⅓ feet. The hull and engine are both of a design and type long out of date. Both were built in 1875 and have been in regular use for 39 years. The old, single, vertical, direct-acting engine, which any modern factory would throw in the scrap heap rather than use longer, can under favoring circumstances drive the vessel at an average speed of 7½ knots per hour. As every engineer knows, this old single-cylinder type is likely to be caught "on the center," a dangerous situation when in close quarters or in a heavy seaway, as it temporarily deprives the vessel of her power.

The hull, which is composite, with iron frames and wood planking, is weak. The frames are thin in places and the deck is old and worn. The ship can not be safely assigned to any duty where there is severe strain. The average annual cost for repairs during the last 10 years has been \$2,160, a total of \$21,600, or 34 per cent of the original cost, which was \$63,400.

It will be noted respecting these three vessels that the ship which cost the least has required the greatest outlay for repairs and the ship which cost the most required the least outlay for repairs. This is quite normal and points a warning against the expensive policy of purchasing secondhand vessels because they are cheap. There can hardly be a more expensive investment than a cheap ship.

The *Gedney* has, of course, no electricity nor any apparatus to make fresh water or for refrigerating. The petty officers have no mess room. The six officers of the ship are quartered in a small, open wardroom which answers the threefold purpose of sleeping, dining, and living. She has not storage room enough for the provisions necessary for an Alaskan season, making it necessary frequently to return to port at considerable expense. At the close of the present season about \$2,000 will be required to put the ship

in as fair a condition as is possible for so old a vessel for another season's work.

The *Gedney's* commanding officer advises under date of August 21:

It is impossible to examine the iron plates used for diagonally strapping the frames, but it is safe to state that their strength is more than half gone.

Quite apart from the utter unfitness of these vessels for their work and from the danger of operating them in heavy weather is the fact that the slow speed of a surveying vessel in Alaska or along the coast of Oregon or Washington results in a costly waste of time. In executing the details of surveying there is constant necessity for landing parties at points distant from anchorage or from the rendezvous of the launches which are in use. The ship has to proceed from her anchorage with sounding or other work, must then return, pick up parties, and go back to the anchorage or to points where other parties are waiting. Often the working ground is 15 to 20 miles (2 to 3 hours' steaming) from an anchorage. In such a case a slow vessel loses an hour in the morning and an hour in the afternoon. On a working ground with such weather conditions as prevail off Alaska, where rain, fog, and gales prevent or hinder actual results on from one-third to one-half the working days, it is within the truth to say that slow speed reduces the output of a vessel from 10 to 20 per cent.

The captain of the *McArthur* informs me that during the current season, 1914, on several occasions he has started one party out from the ship, then landed another 5 to 8 miles away, then run 20 miles to occupy a triangulation station. After the triangulation party returned to the vessel he had then to return to the original anchorage 12 to 14 hours after landing the first party. He states that "any of our commanding officers can cite numbers of seasons where the total time of running to and from work would amount to from 100 to 200 hours." The obvious costliness of keeping vessels at this service whose speed is but half that which is ordinary to-day is as wise as it would be to send a messenger on urgent business with instructions to walk rather than ride.

There is no doubt that the great work of surveying and charting Alaska is taking much longer and costing much more than it ought by reason of the unfitness of the vessels for their work. The vessels in our ocean service should have power sufficient to work off a lee shore in bad weather, to make every hour of good weather count for work upon the finished charts, to cut down to

the utmost the time required for returning to port for coal or supplies, to tow other vessels in danger, or to render assistance when other vessels are in distress. The costliness of using boilers and engines of inefficient design on a coast where coal costs from \$8 to \$13 per ton is too obvious to need comment.

Poor, however, as these vessels are the Coast and Geodetic Survey is not provided with funds sufficient to use them all the time they should be available. A summary of employment of the *McArthur* during the fiscal year 1914 follows:

	Months.	Days.	Per cent of year.
Time in field work, including passage to and from work, July 1-Nov. 12, Apr. 22-June 30.....	6	20	55.5
Repairs, navy yard, Puget Sound, Wash., Feb. 19-Apr. 6.....	1	16	14.4
Boiler repairs at Seattle, Feb. 12-18.....		6	
Completing crew, outfit, adjusting compasses, etc., Apr. 6-22.....		16	4.4
Time idle, laid up for lack of funds Nov. 12-Feb. 18.....	3	2	25.5

From the above it is evident that the vessel was laid up for lack of funds to operate her 25 per cent of the entire fiscal year. This was during the period from November 12 to February 18, when, of course, she could not be used in Alaskan waters. There was, however, abundant work for her to do along our Pacific coast, where she was laid up, which could not be done because there was not money to run the ship.

In the case of the *Gedney*, also, the time spent upon work was 8 months and 9 days; that needed for repairs was 21 days, and this ship also was idle 3 months for lack of funds. This, too, was in the winter season when she could not work in Alaska, but there was nothing save lack of money to prevent her working elsewhere.

Emphasis is laid upon these facts because before the Appropriations Committee of the House of Representatives a different view was urged. It is, however, the plain fact that even these poor instruments are not used for a large part of the time because there is not sufficient money.

It is not necessary to send these worn-out ships in winter to a great distance from their home port (Seattle) in order to find them useful occupation. There is plenty of work for them to do which lies close at hand. If quiet days can not be found in which to send them as far as San Francisco Bay, there is work enough to be done in the sheltered waters of Puget Sound, Grays Harbor,

Willapa Bay, and the Columbia River. In some of these the shifting channels make resurveys necessary. They have not been made because the Department had not the means to keep these vessels in commission to do the work. They were, instead, laid up near by.

This is perhaps the place to add that there is a very large amount of survey work needed all along the Pacific coast, especially on banks and reefs as yet only imperfectly developed. Such are Blunts Reef, off Cape Mendocino; Heceta Bank, off the Suislaw River; and a bank 12 miles off Alseya River. The offshore work from the Mexican boundary all the way to Cape Elizabeth, Wash., a stretch of 1,200 miles, is incomplete, and there is one reach of 150 miles from Cape Blanco to Cape Lookout where no systematic work has been done. Detailed development work is needed off all the projecting points of the coast, such as Points Conception, Buchon, Lopez, Cape Mendocino, Eel River, Humboldt Bay, Trinidad Point, St. George, Cape Blanco, Cape Lookout, etc. The entire Pacific coast will not be as safe as it ought to be till this work is done. For it strong seaworthy vessels with ample power and wide steaming radius are necessary. Neither of the three old ships mentioned can be risked in such service.

It is proposed to replace these three vessels with staunch sea-going ships each 130 feet on the water line, about 500 tons, with twin screws, compound engines, two independent water-tube oil-burning boilers, electric plant for wireless signals, lights, and all auxiliaries, fresh-water condensers, refrigerating plant, etc. Sanitary and comfortable quarters and sufficient working space will be provided for the crews and officers. These vessels go on cruises of six or seven months' duration in places remote from settled regions, and they should carry an outfit and complement capable of meeting emergencies.

Three small steamers (large launches) are also required to take the place of launches now hired for wire-drag work on our Atlantic shore and to meet the constantly recurring demands for resurveys on that coast. These vessels will be each 75 feet long, twin-screw, with internal-combustion compound engines, from 90 to 150 horsepower, compressed air for auxiliaries, acetylene light, sanitary quarters, and with working space for four officers and eight men. At present the officers and men have to stay in hotels or boarding houses on shore. Such accommodations are often lacking near the working ground, causing a serious reduction of the available working time and increased expense.

A list follows of the vessels now employed by the Coast and Geodetic Survey.

Name.	Length.	Breadth.	Gross tons.	Where and when built.	Age.
<i>Employed on the Pacific coast.</i>	<i>Feet.</i>	<i>Feet.</i>			<i>Years.</i>
Gedney.....	140.0	23.8	244	New York, 1875.....	39
McArthur.....	115.0	20.0	220	Mare Island, 1876.....	38
Patterson.....	163.0	27.0	500	Brooklyn, N. Y., 1882.....	32
Cosmos.....	52.5	12.0	30	Mare Island, 1887.....	27
Yukon.....	75.0	15.7	38	New York and St. Michael, 1898.....	16
Taku.....	70.6	16.5	54	San Francisco, 1898.....	16
Explorer.....	135.0	27.0	335	Wilmington, Del., 1904.....	10
<i>Employed in Philippine Islands.</i>					
Pathfinder.....	168.0	33.6	690	Elizabeth, N. J., 1899.....	15
<i>Employed on the Atlantic coast.</i>					
Bache.....	153.2	26.2	370	Shooters Island, N. Y., 1901.....	13
Endeavor.....	111.0	18.5	130	Norfolk, Va., 1862.....	52
Hydrographer.....	101.0	19.5	116	Port Jefferson, N. Y., 1901.....	13
Matchless (schooner) ...	91.0	25.0	118	Key West, Fla., 1859.....	55

Extension of Wire-Drag Service.

But the restrictions placed upon the Coast and Geodetic Survey through improper housing and ancient vessels are not all the burdens this service has to bear. It is not provided with the necessary apparatus for making the soundings which it is required by law to carry on and for which it exists. Sad experience has shown that the ordinary sounding apparatus will not detect that dangerous foe of the navigator—the pinnacle rock. On various points of our coast sharp spines of rock project from the bottom with points so small that a sounding line glances off. Two such have within recent years caused serious losses. One was the means of sinking the lighthouse tender *Armeria* on May 20, 1912, causing a loss of \$175,000, and another sank the steamship *State of California* on August 17, 1913, with a loss of 31 lives and \$350,000 value in property. Half the cost of these two wrecks used in surveying with the only apparatus for the purpose would have gone far to making the coast of Alaska safe. In cases of this kind the use of what is known as a “wire drag” is essential to make channels and harbors safe for vessels. There is no other method by which safety can be assured, and the extension of this work is an urgent necessity not only in Alaska but along other portions of our coast.

The wire drag is a device by which a long wire, maintained at any desired distance below the surface of the water, is towed over the area to be examined. The action of one of the many buoys which support the wire indicates the presence of an obstruction and its location. This device surely finds such obstructions. Nothing else will do so. As the speed at which such a device can be towed is but from 1 to 2 miles an hour, to which must be added the time taken in buoying the obstructions met and in determining their exact depth and position, the work is necessarily slow though thorough.

As large areas are involved, it is imperative that the work be taken in hand as soon as possible with as large a force as funds permit. A wire drag has been used during the open season of 1914 in the harbor of Portland, Me. The officer in charge of the work states that it has demonstrated—

That a number of submerged ridges lie almost across the track of vessels entering the harbor.

That the depths on these ridges are unequal, many of the higher knobs constituting dangers to deep-draft vessels.

It further appears from the records of this work that—

1. It is now possible to select a safe channel for the deepest draft vessels.
2. Certain channels which were being considered for improvement have been proved unsuitable.
3. Harbor improvements may now be considered with a full knowledge of the conditions in the approaches.

In other words, the nature of the bottom of Portland Harbor, though often surveyed, is now for the first time accurately known and navigation and improvement may proceed intelligently.

A wire-drag party was organized in 1906 on the Atlantic coast, since which year it has worked in southern waters during the winters and in northern waters during the summers. In these eight years it has found 3,300 rocks with less water over them than the charts showed. Of these, 893 were distinct menaces to navigation. These last were distributed as follows:

Coast of Maine.....	400
Coast of Massachusetts.....	87
Block Island and Long Island Sounds.....	65
Coast of Florida.....	300
Coast of Porto Rico.....	25
Panama Bay.....	16

The Department requested of the Congress for the current fiscal year an appropriation to furnish vessels in place of the antiquated ships above described and also such an increase (from \$165,000 to

\$225,000) in the appropriation for surveys in Pacific waters as would permit the operation there of a wire-drag apparatus. In this request the five steamship companies whose vessels navigate Alaskan waters joined. Both requests were refused. The owners of one of the steamship lines trading in Alaska, who have recently lost a valuable steamer on that coast, have announced their intention of withdrawing from one of their routes there its largest vessels until the surveys have been far enough advanced to guarantee safe navigation. It is needless to say that insurance rates on unsurveyed portions of the Alaskan coast are so high as to be almost prohibitive.

The plan of discovering hidden rocks by running vessels on them is still in vogue. This does not commend itself as a business proposition, apart from the humanity of the case. It has been such common practice, however, that rocks are commonly named after the steamer which hit them. For example, in Tongass Narrows, Alaska, are Idaho Rock, Ohio Rock, Potter Rock, and California Rock, each named after the vessel which discovered it by striking it.

The Department has endeavored to make plain the urgent need for funds for this vital work. The appropriation which was granted contained not an additional dollar for either purpose and is not of itself sufficient either to operate its existing old vessels the full period in which they ought to be used or to provide for wire-drag surveys anywhere on the Pacific coast.

In a schedule on a later page, showing in detail the use of funds by the Coast and Geodetic Survey on the Pacific, it will be noted that an allowance has been made of \$15,000 for wire-drag work in Alaska. This has been possible only by laying up our surveying steamers a still longer time in the spring, so as to permit diverting this money. In other words, having to work with insufficient funds we must leave some of our vessels idle longer than usual. Having informed Congress that this work with the wire drag is of vital importance in Alaskan waters, it is interesting to note what the results have been of the little we have thus been able to do. It has been confined to Tongass Narrows, Nichols Passage, and Revillagigedo Channel, Alaska, a distance of about 40 miles with widths varying from three-quarters of a mile to 5 miles.

Complete results of the work have not been received, but 14 pinnacle rocks that are a certain menace to navigation within this area have been found. These rise abruptly from depths

varying from 5 to 100 fathoms, and are of a character which preclude their discovery by the ordinary methods employed in maritime surveying.

A little experiment in wire-drag work in this small area, which had previously been sounded with the lead line and is one of the most important highways for shipping in Alaska, has therefore developed in a few weeks' time 14 menaces to vessels that have been hitherto unknown. In 6 cases there were less than 8 feet of water over the pinnacles and in no case as much as 32 feet. In one case a rock that was less than 3 feet beneath the surface had 65 feet close beside it; in another case where the pinnacle was within 14 feet from the surface there were 162 feet beside it. The charts we have, which are based on surveys with the lead line, give no indication of these certain destroyers of ships, nor would the use of the lead line by the navigator give any warning. Being of small extent, rising almost perpendicularly from greater depths, they probably could never be found in surveying by the lead line. It would be a mere lucky chance if they were. There are two methods known to find such dangers. One is that we have hitherto tried—it is that of finding them by running ships upon them. It is costly in life and property, but it is the only method which till now has been used. The other is to use the wire drag, but this, if well done, will cost something like \$60,000 a year. It will save ships costing many times that every year, as the records show.

It is well to have found these 14 pinnacles, but it points to a great and immediate need of more work of the same kind, and if one were to say stop your surveying steamers still more in order to do this wire-drag work, let the dead voices and the sunken ships from unsurveyed Alaskan shores give him their answer. Will the people of the United States regard with patience an attitude which says substantially, "Let ships go down and let the people drown. We can not afford either to keep our surveying vessels moving the season through or to provide the only form of sounding apparatus that in those waters is certain to insure safety." If we refrain from this necessary work, we must, as a nation, either confess poverty or indifference or deny the facts or allege that something else is of more value than human life. What shall the answer be?

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Geodetic Work.

I have thus far spoken only of the coast survey work. It remains to speak briefly of the geodetic work of the Survey. This

includes the fundamental precision surveys to which all boundaries and land measurements are referred. It fixes the relation of our coast lines to each other, and serves as the fundamental basis of all chart and map making. This highly practical branch of engineering is required by the following organizations of the Government which use it constantly: The Engineer Corps of the Army, the United States Geological Survey, the General Land Office, the Reclamation Service, the Forestry Bureau, the Bureau of Soils, the Topographic Division of the Post Office Department, the Drainage Investigation Division of the Agricultural Department, the Valuation Division of the Interstate Commerce Commission, the International Boundary Commission, and several bureaus of the War Department.

This work is also utilized by the State boundary surveys, highway commissions and drainage commissions, and largely by railroads, consulting engineers, surveyors, physicists, and astronomers. It is constantly scrutinized by parties interested all over the world, both as to its cost and method.

In France, Commandant Perrier says of our geodetic work:

There is no example in the history of geodesy of a comparable collection of measurements made with so much decision, such great rapidity and such powerful means of action and guided by such an exact comprehension of the end to be attained.

Petermann's Geographic Magazine, the most famous of its kind, published in Germany, reviewing in 1913 our work on a new arc, says:

Worthy of remark is the accuracy attained in the measurements * * * but not less noteworthy are the great rapidity of execution and finally the small costs. In both of these last particulars probably it is not excelled by triangulation in any other land. This volume is a further noteworthy example of the untiring energy with which in the United States surveying and geodesy are carried on.

At the conference of the Surveyors General of New Zealand and Australia, in 1912, a geodetic survey under a Federal organization was recommended, with the statement that it should be conducted "on similar lines to those adopted in the United States Coast Survey, and, taking the coast line first, should be gradually extended inland."

The Surveyor General of India says:

I must thank you for your interesting chart of triangulation which I received with your letter of the 22d November, 1912. It is certainly an extraordinary piece of work, we have no means of working here with such rapidity. I see that your observers completed 103 stations in 200 days, including 17 observed azimuths and 2 bases. I am circulating the chart to our observers.

In 1909 at the meeting of the International Geodetic Association held in Cambridge and London the Americans were congratulated on having introduced a new epoch in geodesy.

Dr. Woodward, a distinguished geodesist and president of the Carnegie Institution, in an address before the Philosophical Society of Washington said that the work done on isostasy by the chief of the computing division of the United States Coast and Geodetic Survey "is the greatest contribution to geodesy since the time of Bessel and Gauss."

During July, 1914, 120 miles of precise leveling were completed on the line between Butte, Mont., and Pasco, Wash. The running of 120 miles of completed work constitutes a world record. The previous record, also established in this country, was 112 miles for one calendar month, and was made about eight years ago.

It is not easy to obtain the cost of work of this kind in foreign countries. We find, however, in the report of the Trigonometric Survey of India that one leveling party composed of 35 persons makes progress at the rate of 52 miles per month. In our Coast and Geodetic Survey one party of 6 men averages about 79 miles per month. The cost of precise leveling by other branches of this Government given by a standard work on surveying (1910) states the cost at from \$15 to \$32 per mile. It also gives the cost of French leveling at \$10 per mile and German at \$9.50 per mile. I present tables showing in detail, graphically and in figures, the steady increase in the efficiency of our geodetic work, as well as a condensed statement of the problem of the geodetic work required in the United States.

* * * * *

There are about 12,000 linear miles of primary triangulation in the United States. There should be added within a few years 9,000 miles more.

About 19,000 miles more of precise leveling should be done in this country for immediate use.

At the present rate of appropriation for geodetic work it would require over 30 years to do the above work.

The geodetic work done in this and in other countries is shown in the accompanying diagrams on pages 162 and 163.

There follows a statement of the estimates of this service from 1904 to 1915, inclusive, and the appropriations from 1903 to 1915, inclusive.

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STEAMBOAT-INSPECTION SERVICE.

Summary of Work.

During the fiscal year ended June 30, 1914, 318,094,347 passengers were transported on those vessels which are required by law to report the number of passengers carried. The total number of accidents which resulted in the loss of life during this period was 232, and the number of lives lost was 582, including passengers and crew, an increase over the previous year of 146. Of the total number of lives lost, 185 were from suicide, accidental drowning, and other similar causes, which leaves 397 which can fairly be chargeable to accidents, collisions, explosions, foundering, etc. The total number of passengers who lost their lives was 105, which is a ratio of 1 life lost for every 3,029,469 passengers carried.

The number of vessels inspected and certificated in the fiscal year 1914 was 7,930, with a tonnage of 9,970,510, a decrease of 35 in number, with an increased tonnage of 898,518, compared with the previous fiscal year. Of the vessels certificated 6,217 were domestic steamers, with a tonnage of 5,079,432, a decrease of 178 in number and of 30,137 tons; and 545 were foreign passenger steamers, with a tonnage of 4,374,006, an increase of 95 in number, and of 946,692 tons. Sail vessels and passenger barges to the number of 27 were inspected, with a tonnage of 12,734, a decrease of 6 in number and of 3,564 tons; and also 564 seagoing barges, of 473,318 tons, an increase of 7 in number, with a decrease in tonnage of 19,230. Five hundred and seventy-seven motor vessels, with a tonnage of 31,030, were inspected and certificated, an increase of 47 in number and 4,767 tons.

Licenses were issued during the year to 18,871 officers of all grades, a decrease of 7,611 from the preceding year. There were 4,829 applicants examined for visual defects, 61 of whom were rejected and 4,768 were passed. Compared with the previous year, these figures show a decrease of 2,841 in the number examined and 2,818 in the number passed.

At the various mills 3,159 steel plates for the construction of marine boilers were inspected, a decrease from the previous year of 49, and of this number 166 were rejected. In addition to these plates, there were inspected at the mills a large number of steel bars for braces and stay bolts for marine boilers and also several hundred plates for stock and repair purposes. Many requests were received from other branches and departments of the Gov-

ernment for the testing of boiler material at the mills. These received the attention of the Service, and prompt reports were rendered to the proper officials.

During the year there were examined and tested at various manufactories 174,122 life preservers, of which 1,210 were rejected.

The total number of permanent positions in the Service at the end of the fiscal year was 265, consisting of 188 officers, 76 clerks, and 1 messenger. Three vacancies existed in the Service on that date.

Activities of the Service.

The Steamboat-Inspection Service, as its name partly implies, exists for the purpose of inspecting those vessels of the American merchant marine which are required by law to be inspected; licensing officers of merchant vessels; conducting investigations of casualties and violations of law coming under its jurisdiction; regulating the transportation, on water, of persons and articles, and making certain inspections for other departments of the Government. Each of these subjects will be taken up and discussed in its respective order.

Hull Inspection.

Under the rules of the Board of Supervising Inspectors, blue prints descriptive of the hull construction of vessels of over 100 gross tons are required to be filed with the local inspectors of the districts where such vessels are to be inspected, but it is not at present required that these blue prints be approved by such inspectors. Some thought has been given to the question of requiring that the blue prints be approved by the Steamboat-Inspection Service, but the Department is convinced that this approval should not be given by the local inspectors. It is believed that there should be stationed in the Office of the Supervising Inspector General experts whose business it would be to pass upon proposed hull construction. This is deemed necessary, first, to provide the Department the expert advice which the subject requires, and second, to bring about a uniform administration of the law, with which the Supervising Inspector General is charged.

To adopt this plan would, however, require the enactment of a statute that would give this express authority to the Steamboat-Inspection Service, and there would be required an appropriation for the employment of the experts. Furthermore, it would

be a distinct departure from the principles that have heretofore governed the Steamboat-Inspection Service in the matter of the jurisdiction of local inspectors, in that it would transfer from local inspectors to the central office the responsibility of passing on the certain features affecting the seaworthiness of vessels. It is a matter which requires careful thought, and is not one to be adopted without full and due consideration, but it is a situation that faces the Steamboat-Inspection Service to-day, and which will, as time goes on, require more and more attention.

The Steamboat-Inspection Service inspects vessels in order to make travel by water safer. While much has been done to provide lifeboat and fire-fighting apparatus, the most important thing to do is to make the ship itself as nearly unsinkable as possible. Having done this, there should be placed on board the vessel the proper equipment to take care of those who travel on the ship, and the vessel should be properly manned.

The greatest danger on board ship is from fire, and it is believed that in order to follow out the principle of making the ship itself as safe as possible, before taking up the question of equipment, the Government should require that all excursion steamers be fireproof throughout. By some it may be claimed that it would not be practicable to make excursion steamers absolutely fireproof, as to do so would prevent them from being commercially profitable, but a contrary view has been entertained for a number of years by the Supervising Inspector General of the Steamboat-Inspection Service. In the annual report of that officer for the fiscal year ended June 30, 1905, it was stated that the inflammability of the ordinary type of river and excursion steamer was a matter that should have the fullest consideration of the Department; that while fire is one of the worst conditions that have to be met, and the most appalling in its results, little or no effort had been made to design these steamers upon any different plan than those which had been in use for years. It was pointed out in that report that paints, compositions, and various other compounds of a so-called fireproof character had been suggested and tried, but none seemed to have served its purpose. It was also pointed out that there was at that time in course of construction in one of the prominent shipyards of the country a river steamer nearly 300 feet in length that had been designed with a view to having her as nearly fireproof as utility would permit.

In the annual report of the Supervising Inspector General for the fiscal year 1906, the construction and operation of a fireproof

excursion steamer was said to have proven successful beyond the strongest hopes of those who conceived this type of construction, and the opinion was advanced that Congress should enact legislation requiring fireproof construction on all excursion steamers thereafter built or contracted for.

In the meantime, in the absence of fireproof construction on excursion steamers, the best precaution that can be taken against the loss of life and property is to maintain the very best fire-fighting equipment on such steamers, and to have these crafts manned with excellently drilled crews who are competent to fight fire in the event that necessity arises therefor.

Until Congress requires fireproof construction of excursion steamers, it is believed also that the use of some such sprinkler system as is now installed on many passenger steamers should be extended.

Boiler Inspection.

Uniform administration of the law, with which the Supervising Inspector General is charged, can be attained, so far as boiler construction is concerned, only by requiring that all boilers used on vessels subject to inspection shall first be approved by experts in the office of the Supervising Inspector General. While the inspectors in the field service have heretofore done excellent work in this respect, we nevertheless live in a period of progress and the Steamboat-Inspection Service should be no less progressive than modern and effective business organizations. The law should therefore be changed so as to require the approval by the Supervising Inspector General of the design of these boilers.

During the past year the Steamboat-Inspection Service has made special efforts to see that actual internal examinations, so far as may be possible, are made of all boilers. The inspectors have given this matter their careful attention and the importance of the actual internal examination has been so impressed upon them that better work than ever before is now being done in this direction.

In the logical development of business and of administrative methods increasing attention is given to detail. Certainly this has been true of boiler inspection as made by the Steamboat-Inspection Service. For example, particular attention is now given to fusible plugs, which is mentioned merely as an illustration of the extent of the detail of boiler inspection. But as the work becomes more detailed, the necessity has arisen for an additional number of boiler inspectors.

At present numerous orders are being given for repairs to boilers, and in districts where the pressure of work is not particularly great personal attention can be given by the inspectors to seeing whether these repairs are actually made; but there are districts where the pressure of work is exceedingly great, while the number of inspectors is relatively small, and in them it is impossible to give boiler repairs the attention which safe navigation would require. The fact is that the day of the affidavit is past, and the day of the actual "follow-up" system is at hand.

With reference to boiler inspection, attention is invited to section 4433, Revised Statutes, which has long since passed the period of its usefulness, and is no longer adequate to meet the conditions it was designed to govern. For the purpose of determining the working steam pressure allowable on marine boilers it was perhaps at the time of its enactment all that was necessary, but materials, construction, and methods of operation have changed so greatly that it can no longer be utilized to fairly determine working pressure. In its present form it takes into consideration only the value of the plate and the respective values of single and double riveted lap joints. No value is allowed any other rivet plan than these two, and single or double butt-strap joints, with rivet plan of any design, receive no consideration whatever in determining allowable pressure beyond that mentioned. An examination of the rules and regulations of the leading boiler insurance companies of this country will show that section 4433 is not consistent with the best modern practice, and should, therefore, be amended so as to provide that every boiler hereafter constructed of plates inspected as required by Title I, II shall be allowed a working steam pressure as determined by the rules of the Board of Supervising Inspectors. The enactment of a statute containing such a provision would give to the Board of Supervising Inspectors that discretionary authority for arranging for boiler construction that it should possess if it is to make its rules meet the best modern practice.

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Licensing of Officers.

In licensing officers of the American merchant marine, inspectors of the Steamboat-Inspection Service must regard not only the physical condition of those who apply for licenses, but also their mental equipment, to determine whether they are safe persons to intrust the navigation of vessels subject to inspection. The licensing of officers during the past fiscal year has been unusually

extensive, and while at first the available supply of third mates was not large enough to meet the demand it is believed that now there is a sufficient number to man properly all vessels to which the law applies.

The so-called "seamen's bill," which is now before Congress, provides for certificating lifeboat men. While the bill requires the local inspectors to certificate these men and keep a list of the names of those to whom certificates are issued, it is also the plan of the Supervising Inspector General to maintain in the central office a complete list of all lifeboat men who receive certificates from local inspectors.

Transportation of Persons.

Measures which have been adopted to prevent overloading of passenger steamers were described in my report for last year. This is a matter governed largely by certificates of inspection, which limit the number of persons that may be carried. Special effort is made to detect overloading of passenger vessels after the issuance of the proper certificate. Inspectors are giving constant attention to the passenger-carrying allotment of passenger and excursion steamers, and the number of passengers permitted to be carried now is relatively smaller than was permitted to be carried a few years ago. In any event, the original jurisdiction is placed by law in the hands of the local inspectors, and it has been impressed upon those officers that they will be held accountable for a strict performance of their duty in this respect.

During the past fiscal year there was put into use a new form for reporting on a card the number of passengers carried. As these cards were received in the Bureau they were carefully examined, and in every instance where it appeared that there was overloading, or a suspicion of it, the case received prompt and immediate attention. It is not steamers subject to inspection that violate the law or on which danger exists in the matter of carrying passengers; where danger exists is on motor vessels not subject to inspection and in some instances on motor vessels subject to inspection. In this connection attention is invited to the fact that under the present law there is no authority to restrict the number of passengers that may be carried on vessels other than steam vessels and for the purpose of correcting this condition it has been proposed that section 4464, Revised Statutes, be amended to read as follows:

SEC. 4464. The inspectors shall state in every certificate of inspection granted to vessels carrying passengers, other than ferryboats, the number of passengers of each class that any such vessel has accommodations for and can carry with prudence and safety.

It will be noted that the desire is to substitute the word "vessel" for "steamer."

Under present conditions the situation, as concerns motor vessels, is partly met by their equipment—that is to say, the vessels are boated according to the number of persons they carry—but it must be obvious to anyone that this is an attempt to control a dangerous situation by indirect methods, which are never satisfactory. Is it necessary that in order to eliminate the danger of carrying too many persons on motor boats there shall be some great catastrophe? In the light of the past, why is it necessary that this lesson should be brought home at such cost? Attention is called to this matter so that proper legislation to correct this very dangerous condition may be considered by Congress.

Transportation of Dangerous Articles.

Perhaps, in the effort to protect lives, the danger that exists from the transportation of dangerous articles is underestimated. The Steamboat-Inspection Service endeavors to control as much as possible the transportation of dangerous articles on steamers carrying passengers, and while in some instances the Service has been conservative in this respect it is believed that it has acted on the side of safety, and in such a course public opinion will always support it.

Attention should be given to the extent of the authority of the Steamboat-Inspection Service over the transportation of dangerous articles on nonpassenger steamers. While from the commercial standpoint there are no passengers on these freight vessels, the Government nevertheless owes it to their crews to protect them. Further, the carrying of dangerous articles in a dangerous manner on steamers that are not carrying passengers endangers the lives of those on passenger-carrying steamers which are navigating in their vicinity. The jurisdiction of the Steamboat-Inspection Service should, therefore, be extended to the transportation of dangerous articles on nonpassenger steamers.

Extension of the Service.

Reference has been made to the extent to which the details of hull inspection have been developed; the extent to which the details of equipment have advanced; the attention which inspectors are required to give not only to the approval of blue prints of boilers but also to following up repairs that are ordered thereon. The desirability of extending the inspection of motor vessels has been pointed out. The importance of reinspections is very evi-

dent, but the inspectors of the Steamboat-Inspection Service have not in all instances been able to make all the reinspections or dry-dock examinations that are required. This is not the fault of the inspectors or of the system, but is due to the Service not having a sufficiently large number of men to perform its work.

It is useless to pass more exacting laws or for the Board of Supervising Inspectors to go into any greater detail in the matter of the Rules and Regulations until Congress shall have given the Steamboat-Inspection Service enough men to enforce the laws and carry out in an intelligent manner the rules that already exist. In some districts men are required to work from 5 o'clock in the morning until 10 or 11 o'clock at night. Such a thing should not be. Such a condition is wrong. A great and powerful Government such as ours should certainly provide a sufficient number of inspectors to properly perform these duties. If disasters occur as a result of lack of thoroughness, the responsibility will not rest upon the Steamboat-Inspection Service. The importance of this matter should be clear to Congress, and, as already stated, it should not be necessary for a great disaster to occur before the necessary steps are taken to prevent further disaster.

If there is to be given to this Service the licensing of seamen, it is evident that the work of the field service will be substantially increased; and in order to centralize and have uniform standards for the approval in the office of the Supervising Inspector General of hull and boiler construction there must be a larger number of men in the central office.

The Steamboat-Inspection Service has a very excellent organization, as well as splendid systems that result in the fixing of responsibility, but systems are of no effect, and organization amounts to nothing, if sufficient men are not furnished to properly operate the machinery. The Steamboat-Inspection Service is so organized as to be capable of indefinite expansion, but it is to-day up to the limit of its endurance. The cry of the Service is for more men, and unless more men are furnished the proper standard of inspection can not be maintained.

Division of Districts.

During the past fiscal year a new board of local inspectors was established at Los Angeles, Cal. This was in accordance with legislation which permitted the district of San Francisco, Cal., to be divided, whereby two boards of local inspectors now cover the

territory that was once covered by one, with the result that more prompt attention is given to the business of the Service and more detailed attention is given to inspection.

In the annual report of the Supervising Inspector General for the fiscal year ended June 30, 1913, reference was made to the need for dividing the first supervising inspection district, which at present comprises the local boards of San Francisco, Cal.; Los Angeles, Cal.; Portland, Oreg.; Seattle, Wash.; St. Michael, Alaska; Juneau, Alaska; and Honolulu, Hawaii. The supervising inspector in charge of this district is stationed at San Francisco. This one officer has under his jurisdiction the entire Pacific coast and a good part of the Pacific Ocean. He is a capable man, but it does not need any argument to convince one that the work of at least two men is being required of him, and that it is not possible for one man in such a district as this to give proper attention to all matters coming under his jurisdiction. The first supervising inspection district should be divided and a new district should be created, to include the local inspection districts of Seattle, Portland, Juneau, and St. Michael, with a supervising inspector stationed at Seattle, Wash. Such an arrangement would leave in the old first district the local districts of San Francisco, Los Angeles, and Honolulu, with the supervising inspector stationed at San Francisco, Cal.

Summary of Proposed Legislation Affecting the Service.

It is believed that the system of issuing certificates of inspection should be changed. Apparently it is not necessary to furnish vessels with a large number of copies of certificates as required by present practice. The same purpose would be served if the local inspectors were to furnish the original certificate direct to the vessel and supply the collector or chief officer of customs with a copy. The result would be a saving in the number of copies of certificates of inspection to be made up, and the original copy would go to the master or owner of the vessel, which should always have been the practice. A recommendation that the law be amended in this respect is now receiving the consideration of the Department.

It is evident from what has already been said that the name "Steamboat-Inspection Service" is not a proper designation for this Service. Its activities are too varied to be designated by such a narrow term, and the necessary legislation will be requested to the end that the name may be changed to "Marine-Inspection Service."

Careful attention should be given to the drawing of a new motor-boat law. Such an act should be simply worded and easily understood, and contain every necessary provision to properly protect human life.

It is believed that section 4464, Revised Statutes, should be amended, as already pointed out, so that inspectors of this Service may have undisputed jurisdiction over the number of persons that shall be carried on vessels.

Section 4472, Revised Statutes, should also be amended so as to extend the authority of the Steamboat-Inspection Service, and invest it with jurisdiction over the transportation of dangerous articles on nonpassenger steamers as well as on passenger-carrying steamers.

Proper legislation looking to fireproof construction of excursion steamers should be enacted, and in the interest of good administration, legislative authority to divide the first supervising inspection district should be granted by Congress.

BUREAU OF NAVIGATION.

Tonnage of the Merchant Marine.

The total documented merchant shipping of the United States on June 30, 1914, comprised 26,943 vessels of 7,928,688 gross tons. This tonnage is the largest in our history, and it is gratifying to note that of the total 2,360 vessels of 1,066,288 gross tons are registered for foreign trade. During the year 1,151 vessels of 316,250 gross tons were built in the United States.

A sweeping change in our traditional maritime policy was effected by the act of August 18, 1914, which removed the restriction of American registry to vessels built in the United States and officered by American citizens. This change brings our laws in accord in these respects with the laws of Great Britain, Norway, and other maritime nations. While the passage of this act was hastened by the outbreak of the European war, it was in fact in the line of a manifest tendency for some years toward change in a maritime policy which had been outgrown and had hampered rather than fostered our progress on the seas.

Section 5 of the Panama Canal act of 1912 provided for the admission to American registry for foreign trade of vessels built abroad not more than five years old. Convinced that this age restriction would prevent the growth of our merchant marine as rapidly as the growth of our foreign trade permitted, in consequence of a more liberal tariff policy, I suggested in March, 1914,

the removal of that restriction. A bill to give effect to this suggestion (H. R. 14661) was introduced on March 16, but was not acted on until August, when the need of such legislation was brought home to all by the sudden check upon ocean foreign trade and transportation for the few weeks immediately following the outbreak of war in Europe.

During the past 25 years considerable amounts of American capital have been invested in shipping under foreign flags. While there have been, of course, no exact figures available, it has been generally understood that American capital had built or controlled about 150 ocean vessels, aggregating about 600,000 gross tons, the owners of record of which were Belgian, British, or German subjects, and, in a few instances, of other nationalities. The law forbade American registry to such ships, which were built abroad. Furthermore, the laws allowed none but Americans to act as officers on American ships. The act of August 18 removed these restrictions and thus enabled American property, continuously held in some instances for years, to assert truthfully its national character by the recognized national emblem and national papers at sea.

The second section of the act gave the President large discretionary powers, which were exercised in an Executive order issued on September 4. Between that date and October 15, 74 vessels of 267,240 gross tons were registered either at the customhouses or, in a few instances, provisionally by American consuls at foreign ports under forms and regulations agreed upon by the State Department and the Department of Commerce and based on established American and international custom and precedent.

The suspension for two years of the laws concerning survey, inspection, and measurement in the case of foreign-built vessels admitted to registration will afford the opportunity for the revision of such laws, wherever it may be found desirable in the interest of competitive navigation. A critical examination of those laws, however, will show fewer embarrassments arising from acts of Congress than many who have not read those laws are disposed to believe. The principal restriction designed in the interest of domestic shipbuilding has been permanently removed in the case of seaworthy vessels, and the requirement that foreign-built vessels must be certified as safe to carry dry and perishable cargo should not be repealed until the system of inspection has been reestablished.

The law requiring masters and other officers to be citizens of the United States, the second important restrictive feature of our

navigation laws, has been suspended for a period long enough to enable us to determine its full effects. I am disposed to believe that in time it will enlarge the field of employment of competent American officers and engineers. Such, at all events, seems to have been the result when Great Britain enacted similar laws. The British act admitting to British registry ships built outside British territory was enacted in 1849, but with small results until in 1854, when Great Britain repealed the laws requiring the officers and crews of British ships to be British subjects. The Norwegian merchant marine has attained its development under similar liberal laws.

Navigation Receipts.

The receipts from tonnage duties last year were \$1,310,759.03, compared with \$1,273,789.43 the previous year, and are the largest annual receipts from this source in over 30 years. These duties are imposed without discrimination on vessels of the United States and vessels of foreign nations under reciprocal treaties entitled to equal treatment with vessels of the United States, and, consequently, are in no sense a handicap on American shipping. The rates imposed—6 cents per net register ton for five voyages during a year on over-sea voyages, and 2 cents on vessels arriving from foreign ports in North America, Central America, and the West Indies for five voyages—are appreciably less, as a rule, than corresponding charges levied in the ports of South America, Europe, Asia, and Africa. They are one of the lightest burdens we impose on foreign trade. During the current fiscal year the receipts from this source will be considerably reduced in consequence of our diminished foreign trade, owing to the European war.

The receipts from navigation fees during the year amounted to \$152,694.19, almost all of which was collected from vessels in foreign trade. The amount is insignificant in proportion to the value of our exports and imports, which aggregate over four billions of dollars annually. Whenever the balance sheet of our national receipts and expenditures permit, the Department will favor the abolition of these fees, which are collected in small amounts, usually less than \$5 in the case of any ship, and require, accordingly, clerical attention and a corresponding high cost of collection.

The collections from navigation fines during the year amounted to \$40,741.38. The increasing amount of these fines is due to the more effective enforcement of the navigation laws.

The receipts from the three sources named aggregate \$1,504,194.60. In addition to these annual revenues, the sum of

\$446,870.50 was collected during the year under section 37 of the tariff act of 1909, imposing an excise upon foreign-built yachts owned by Americans. The Supreme Court of the United States in the case of *Billings v. United States* (232 U. S., 261) sustained on February 24, 1914, the constitutionality of the tax, and in its decision also required the payment of interest on the amounts due since 1909 but not collected pending the determination of the constitutionality of the law. This amount is an extraordinary receipt, and the section of the tariff act of 1909 under which it has been collected was repealed by the tariff act of October 3, 1913. The repeal of the excise on foreign-built yachts accords in principle with the ship-registry act of August 18, 1914.

Shipping Commissioners.

Shipping commissioners at 15 seaports shipped, reshipped, and discharged during the year 378,772 seamen on vessels of the United States, a decrease of 416 compared with the previous year. The amount of salaries was \$63,475.20, an increase of \$1,101.07 over the previous year. In view of the necessity of the most rigid economy in all branches of the public service, the estimates for shipping commissioners provide for only one additional clerk at New York and New Orleans, respectively. The ship-registry act of August 18, 1914, will materially increase the work of shipping commissioners, as they must perform the duties with respect to the crews of the vessels transferred to the American flag formerly performed by foreign consuls. The registry act has been in effect for too short a time to permit any useful estimate of the increase in the work of shipping commissioners which it will entail, or to determine the ports where this work must be performed. The ships thus far registered, however, are engaged in trade mainly with South America and Central America, though the trade with Gulf ports will soon become more important. The opening of the Panama Canal will also contribute to the importance of these ports and will, of course, give added rank to Honolulu. From present indications it will be desirable another year to establish shipping commissioners' offices at Honolulu, Mobile, and possibly at Galveston. The successful operation of these offices is essential to our maritime development.

Radio Communication.

The work of the Bureau of Navigation in enforcing the laws relating to radio communication and the London International Radiotelegraphic Convention, proclaimed by the President on July 8, 1913, during the past year was practically double the work done

during the fiscal year ended June 30, 1913. Ship inspections numbered 6,486, compared with 3,201 during the previous year. The number of stations licensed in accord with the international convention and with the act of Congress numbered 2,309. Examinations were held by the Bureau's inspectors of 2,245 applicants for licenses as radio operators, of whom 1,547 were found competent and licensed. The increase in work of this service has been accompanied by a steady elevation in the standards of efficiency of apparatus and operators, and this relatively new branch of public service may now be regarded as on a firm basis. The increase in the volume of work has been possible only through the employment of low-salaried clerks, permanently or temporarily, to relieve of routine work the inspectors, who are men of scientific attainments, and enable them to devote nearly all their time to tests of apparatus and operators. A year ago the service was practically confined to New York, Baltimore, New Orleans, and San Francisco, but it was extended during the past year to 23 principal seaports and to 10 ports on the Great Lakes. It is gratifying to note that the general principles of our system of Government regulation of radiotelegraphy, namely, the compulsory equipment with radio apparatus of vessels carrying 50 persons or more and the maintenance of a continuous wireless watch and of auxiliary equipment, were adopted by the International Conference on Safety of Life at Sea, and when the international convention shall have been ratified the rules now applied to American ships in the interests of safety will be applied by all the maritime nations.

Both the voluntary and statutory use of radiotelegraphy is increasing rapidly, and for this reason there must be a moderate annual increase in the appropriations for the inspection service. Congress recognized this fact by appropriating \$45,000 to the service for the current year, and the estimates for next year call for \$47,525.

Some slight changes in the act to regulate radio communication, which will be submitted in detail later, should be made to accord with the London International Radiotelegraphic Convention, and changes in slight detail will be desirable to conform to the International Convention on Safety of Life at Sea. I deem it more important, however, that Congress should provide for some regulation of the rentals of stations on shipboard. Control over the rates for messages is now lodged in the Department of Commerce, and if for any reason the regulation of rentals should not be intrusted to this Department it might be assigned to the Interstate Commerce Commission or to the new Federal Trade Commission.

Enforcement of Navigation Laws.

During the fiscal year 1914, 6,720 violations of the navigation laws were reported to the Department through applications for the mitigation or remission of penalties, compared with 3,506 similar cases during the fiscal year 1913. The amount collected from mitigated fines amounted to \$40,741.38, the number of violations of law and the amount of penalties collected exceeding those of any previous year. This fact is not evidence of an increasing disregard for law, but of the more effective enforcement of the acts of Congress, which has resulted in safer conditions of navigation. It has been conclusively demonstrated that the most effective and economical method of enforcing these laws is through the employment by the Department of small vessels engaged exclusively in this work. The motor boat *Tarragon* during the year reported 1,762 violations of law and was operated along the entire Atlantic coast from Key West, Fla., to Eastport, Me., visiting practically all bays, sounds, and harbors, and ascending many of the rivers flowing into the Atlantic. The work of this boat is educational rather than punitive, and except in aggravated cases the penalties incurred for violations, many of which were first offenses, have been mitigated to nominal amounts. The Department has received from many sources testimony to the improved conditions in navigation which have resulted from the visits of this vessel. Congress has now provided for the purchase of another boat which will be used in conjunction with the *Tarragon* for Atlantic coast inspections. It is proposed during the coming winter again to make a thorough inspection of the vessels in the oyster fleet on Chesapeake Bay, on which about 3,500 men are employed. Two years ago such a visit by the *Tarragon* resulted in a marked improvement of the treatment of men aboard the oyster fleet, and in their quarters, food, and sanitary conditions. The abuses which had formerly existed practically ceased. A repetition of the visit is needed to preserve the good results already secured. The work done by the *Tarragon* is not only thorough but economical, the operating expenses during the year aggregating \$7,386.29, while the mitigated penalties already collected amount to \$4,905 with 331 cases remaining to be settled. Beyond operating expenses, \$3,305.60 was expended in new construction and extraordinary repairs mainly to adapt the vessel for service on the New England coast. Under ordinary conditions the amount of mitigated penalties collected from fines imposed in consequence of the inspections of a vessel of this type should meet all the ordinary running expenses.

Another method of enforcing the navigation laws is by the allotment to collectors of customs of small amounts for the hire of vessels for inspection purposes. In this manner, during the past fiscal year, reports of 1,325 violations of law were secured. This method, however, is not wholly satisfactory, as it involves the employment of temporary inspectors who are not trained to the work, and as only small amounts can be allotted to each port systematic inspections are impossible. Since the reorganization of the Customs Service there has been a marked improvement in the work by customs officers under these allotments and it is proposed, if possible, during the coming year to extend this work, especially in ports where the navigation season is comparatively short and the purchase of vessels would not be warranted. During the year 768 cases of violations of the steamboat-inspection laws were reported to the Department, most of these violations involving a shortage in the licensed officers on the vessels. The work of enforcing the navigation laws has to do directly with safeguarding life and property on the water, and, as stated in my report of last year, I believe that a sum equivalent to the penalties collected for violation of these laws should be set apart annually for the use of the Department in extending its efforts to enforce them. The sum of \$30,000 asked for in the estimates this year for this purpose is \$10,741.38 less than the amount actually collected as navigation fines during the past fiscal year.

The following is a statement of violations of navigation laws reported by the various collectors of customs showing the laws violated and the work done by the Revenue-Cutter Service, the motor boat *Tarragon*, local inspectors of steam vessels, radio inspectors, and customs officers, the work of the customs officers under allotments made by the Department being shown in the last column of the second half of this tabulation.

Port.	Total.	Steamboat laws (4399-4500, R. S.).	Motor-boat law "Rules of road."	Surrendered license (4325-4326, R. S.).	Bills of health (Feb. 15, 1893) ^a	Anchorage and St. Marys River rules, Passenger act (Aug. 2, 1882).	Enrollment and li- cense (4336, R. S.).	Entry and clearance (2774-4197, R. S.).	Name on vessel (4178, R. S.).	Change of master (4335, R. S.).	Unloading.	Radio-communication laws.	Miscellaneous.
Baltimore, Md.....	219	45	130	17			2		20	3	1	1	
Boston, Mass.....	949	40	868	27		4		2		1	2	5	
Bridgeport, Conn.....	134	7	104	18					3		2		
Buffalo, N. Y.....	3	1	1									1	
Burlington, Vt.....	54		54										
Charleston, S. C.....	154	12	104	32					3	2	1		
Chicago, Ill.....	105	14	82	6	1		2						
Cleveland, Ohio.....	90		66	15				3		1	5		
Des Moines, Iowa.....	160		139	19					2				

^a Bills of health cases transferred to Treasury Department July 24, 1911.

Port.	Total.	Steamboat laws (4399-4500, R. S.).	Motor-boat law "Rules of road."	Surrendered license (4325-4326, R. S.).	Bills of health (Feb. 15, 1893).	Anchorage and St. Marys River rules.	Passenger act (Aug. 2, 1882).	Enrollment and li- cense (4336, R. S.).	Entry and clearance (2774, 4197, R. S.).	Name on vessel (4178, R. S.).	Change of master (4335, R. S.).	Unloading.	Radio-communica- tion laws.	Miscellaneous.
Detroit, Mich.	112	4	75	8	7	1		1	1	1	10			
Duluth, Minn.	17	1	11	4						1				
Eagle Pass, Tex.	2			2										
Galveston, Tex.	49	24	17	3				1	2	1	1			
Honolulu, Hawaii.	15	1	3	1				1	4	1	4			
Indianapolis, Ind.	1													1
Jacksonville, Fla.	669	20	517	85				4	16	10	9			8
Juneau, Alaska.	41	5	2	23				5	2	2	2			
Laredo, Tex.	14		8	5						1				
Los Angeles, Cal.	79	6	53	9					4	4	1			3
Louisville, Ky.	41		33	8										
Memphis, Tenn.	10		2	8										
Milwaukee, Wis.	16	3	7	2				1	2				1	
Mobile, Ala.	157	4	115	32		1	2		2		1			
New Orleans, La.	218	8	204	3		3								
New York, N. Y.	1,013	237	673	39		13	5	5	17	6	2	11	5	
Norfolk, Va.	235	73	78	69						9	2	3		1
Ogdensburg, N. Y.	57	5	48				3		1					
Philadelphia, Pa.	378	55	265	37			1		12	3	2	2	1	
Pittsburgh, Pa.	21	8	10	3										
Port Arthur, Tex.	126	50	57	13		1						4		1
Portland, Me.	78	10	50	10					3	4				1
Portland, Oreg.	354	6	339	2				1	1					5
Providence, R. I.	130	65	51	9			2		1		1			1
Rochester, N. Y.	34		34											
St. Louis, Mo.	109	3	79	17						5	5			
St. Paul, Minn.	5	1	4											
San Francisco, Cal.	260	19	157	12		2	5	4	18	10	21	11	1	
San Juan, P. R.	28	5	11	2			1					4		5
Savannah, Ga.	98	18	59	4			1		9	1	3	1	2	
Seattle, Wash.	381	10	248	86		1	4	3	14	4	2	3	6	
Wilmington, N. C.	104	8	80	1			2		7	2	4			
Total—														
1914 (49 ports) ^a	6,720	768	4,838	631	8	25	41	26	153	59	90	36	45	
1913 (107 ports)	3,506	333	2,783	23	23	8	24	10	83	26	1	40	152	
1912 (105 ports)	3,634	165	3,119	96	3	12	17	38	81	12			52	
1911 (92 ports)	2,268	182	1,811	23	41	17	45	10	16	43	30			50
1910 (74 ports)	1,070	252	488	17	52	13	61	13	16	68	12	2		76
1909 (64 ports)	1,134	151	710	33	69	3	21	14	7	59		4		63
1908 (73 ports)	852	245	385	12	42	6	21	23	18	30	7	2		61
1907 (66 ports)	684	209	92	88	36	18	62	9	23	52	27	5		63
1906 (77 ports)	670	194	130	114	41	13	27	10	6	49	5	9		72
1905 (63 ports)	524	142	53	99	42	13	21	26	7	20	11	28		62
1904 (66 ports)	706	184	93	101	48	49	16	29	12	24	19	(b)		131

^a Reports are now made by subports through the principal port of the district.^b Included under "Miscellaneous" in 1904 report.

CASES REPORTED TO COLLECTORS OF CUSTOMS.

Port.	By revenue cutters.	By Tar- ragon.	By local inspec- tors.	By radio inspec- tors.	By cus- toms officers.	Cases re- ported under al- lotments.
Baltimore, Md.....	47	105	16	1	50	6
Boston, Mass.....	66	112	22	3	746	257
Bridgeport, Conn.....	14	14	3		103	80
Buffalo, N. Y.....	1		1	1		
Burlington, Vt.....					54	54
Charleston, S. C.....	53	59	4		38	
Chicago, Ill.....	69		12		24	81
Cleveland, Ohio.....	24	1			65	41
Des Moines, Iowa.....	73				87	66 ^b
Detroit, Mich.....	63	4	2		43	10
Duluth, Minn.....			1		16	
Eagle Pass, Tex.....					2	
Galveston, Tex.....	4		8		37	8
Honolulu, Hawaii.....	9				6	
Indianapolis, Ind.....					1	
Jacksonville, Fla.....	3	477	9		180	48
Juneau, Alaska.....	2		1		38	
Laredo, Tex.....			8		6	8
Los Angeles, Cal.....	11		1		67	47
Louisville, Ky.....			1		40	32
Memphis, Tenn.....					10	2
Milwaukee, Wis.....	9		2	1	4	
Mobile, Ala.....	2		4		151	113
New Orleans, La.....			129		89	202
New York, N. Y.....	60	593	265	12	83	
Norfolk, Va.....	8	43	73		111	
Ogdensburg, N. Y.....		45			12	8
Philadelphia, Pa.....	8	143	49	2	176	
Pittsburgh, Pa.....			16		5	
Port Arthur, Tex.....		16	6		104	
Portland, Me.....	38	2	6		32	
Portland, Oreg.....	37		2		315	
Providence, R. I.....		50	68		12	
Rochester, N. Y.....	2				32	31
St. Louis, Mo.....	5		2		102	75
St. Paul, Minn.....					5	4
San Francisco, Cal.....	168		4	3	85	16
San Juan, P. R.....	6		4		18	
Savannah, Ga.....	12	17	1	1	67	
Seattle, Wash.....	114		5	3	259	136
Wilmington, N. C.....	14	81	9			
Total.....	922	1,762	734	27	3,275	1,335

The foregoing statement of the work done by the various inspection services is based on reports made by collectors of customs on Cat. 1078 and is approximately correct. At Chicago, however, the allotment made by the Department was used by a revenue-cutter officer and that Service, as well as the allotment, has been credited with the results. At Galveston, Tex., Laredo,

Tex., and New Orleans, La., the local inspectors are credited with 145 cases, 137 of which were reported by a local inspector whose expenses were paid by an allotment. The statement of cases reported under the Department allotments necessarily is approximate only.

Passenger Act of 1882.

Especial attention has been paid during the year to the enforcement of the passenger act of 1882, and the Department is gratified to note that the steamship companies are cooperating with the inspectors in endeavoring to carry out the spirit as well as the letter of the law. During the year passenger steamers subject to the act, carrying 1,016,453 steerage passengers, made 1,797 entries in ports of the United States, which were subject to detailed inspections covering all the requirements of the law. The act itself looks to the health, comfort, and decency of those traveling in the steerage, and its importance has justified the Department in establishing a system of inspection which is more complete and thorough probably than under any other of the navigation laws. Vessels are boarded on arrival by two inspectors who not only see that the provisions of law have been observed, but passengers are questioned as to conditions which have obtained throughout the voyage.

General Anchorage Law.

The enactment of a general law to define anchorage grounds for vessels and enforce the observance of regulations is again recommended. A bill to carry out this purpose was passed in the Senate two years ago and by the House at the last session. Such an act is very desirable in the interests of safe navigation and commerce. The present law for New York Harbor vests authority in the Department of Commerce, but to my mind it is a matter of relatively little consequence by what department the general work is done, provided it be done effectively and economically.

Safety of Life at Sea.

The International Convention on Safety of Life at Sea, which embodies the unanimous recommendations of the international conference at London, was transmitted to the Senate by the President on March 17, 1914. I earnestly favor its ratification at the earliest practicable day. The scope of the convention and the method of its preparation were so clearly and concisely set forth

in the letter of the Secretary of State dated March 13, 1914, that I can not do better than to quote his words:

The convention embodies the unanimous conclusions of the International Conference on Safety of Life at Sea which met at London from November 12, 1913, to January 20, 1914. The conference was comprised of the representatives of the 14 principal maritime nations and of three of the self-governing British dominions. It was called in a large measure upon the suggestion of the Government of the United States, and the advice of the American delegation was influential upon a great many particulars which entered into this convention. The conference was composed of men trained to the sea and experienced in the administration of the laws relating to maritime affairs, and its unanimous conclusions carry weight on the matters of which the convention treats. The American delegates, who took an active part in the framing of every article and regulation of the convention, are agreed that the international standards for the safety of life at sea thus proposed to be established are higher than those of any nation now in force, and that the ratification of the convention will secure benefits for humanity by the joint action of maritime nations which could not be accomplished by any one nation, however powerful upon the sea. There are probably points in detail in which the convention may be criticized, especially by particular interests, but in its entirety it is high testimony to the will and ability of nations to put aside special and local considerations in order to promote the progress and welfare of mankind. By its terms the ratifications shall be deposited not later than December 31, 1914. Early and favorable action, accordingly, is recommended.

The convention was ratified by the German Reichstag in May, and the British Parliament in August passed the legislation to give effect to the convention. The Senate, I trust, will see its way clear to the unqualified ratification of the convention before December 31, 1914, for the United States should not be laggard in the prosecution of a work in behalf of humanity, in the inception of which our country had so large a share. The report of the commissioners of the United States to the conference was transmitted to the Senate on March 20, and explains in ample detail the provisions of the convention.

International Conference.

The International Conference for the Unification of Maritime Law, which was to have taken place this autumn at Brussels, was indefinitely postponed on account of the European war. The reappropriation of \$5,000 which Congress had made for American representation at this conference, accordingly, will not be used. The International Load Line Conference, which was to have taken place at London, has also been postponed, but the preliminary work for this conference on the part of Great Britain has not been discontinued, and the conference will be called at a suitable date. In view of the very large increase in ocean cargo steamers under the American flag, I deem it desirable that provision in due time should be made by Congress for American representation at this conference.

CONCLUSION.

A great deal is said in public discussion about extravagance in the expenditure of public moneys and the need for economy is repeatedly urged. Attention is directed usually to the mere total of appropriations in any one year, which means nothing whatever respecting the economical use of money. If attention were directed not to totals but to the wise use of funds so that the latter should be made to produce the utmost possible service, much would be accomplished that is now hardly suggested or attempted. Every industrial manager knows that economy requires his plant to be kept in the best productive condition. It is not economical, in order to save a total expenditure, to allow the plant to run down and then have to build it up again. This does not save money, but loses it. Economy of this kind is not economy at all. It merely involves a cycle of expensive changes, costly in themselves and more costly in their results. If, instead of arguing upon totals, without regard to whether the money which comprises those totals has been spent wisely or unwisely, care were centered on the need for expenditure and for the wisdom with which that need is met, money could be saved that will otherwise continue to be lost.

There are several distinct causes of loss of money to the Government to which but little attention seems to have been paid in public discussion of Government expenditure. One of these causes of loss arises from the failure to keep existing plant in operation to its full capacity. Such a case is that of the Coast and Geodetic Survey steamers laid up idle for part of the year while urgent work is waiting. Money thought to be saved in this way is not saved at all, but wasted.

Another cause of loss is the failure to keep the physical plant of the Government in good repair or to maintain it in effective condition. A case of this kind is found in the three old ships of the Coast and Geodetic Survey, on which an excessive amount of repair cost is required and which even with such outlay are not effective.

Another cause of money loss to the Government arises from incomplete appropriations, for example when funds are appropriated to do half the work required, thus necessitating the stoppage of that work and causing greater expense from doing that work in several separate bits, with the incidental depreciation of the work already done before the second bite is taken at it. There is no saving in this process.

Another cause of money loss is the making of insufficient appropriations to procure apparatus suited for the work to be done. This arises when the Government is obliged to buy secondhand ships and adapt them to services for which they were not built. A case in point is the steamer *Gannet*, used by the Bureau of Fisheries, built for a private yacht and unfitted for the work she is called upon to do in the waters on the coast of Maine. The people of this country do not realize that the Government is forced to buy secondhand vessels because money sufficient is not given to get new ones, and they would not, in my judgment, were the facts known to them, approve the existing conditions.

Finally, money loss arises from failure to make appropriations in time to keep the work of the Government moving. The serious results of these latter losses are probably not appreciated. They undoubtedly amount to more than some of the economies thought to be effected by clipping estimates. There is no saving whatever but only loss in forcing the purchase of a secondhand vessel and the adapting it to a purpose for which it is not fit, while at the same time causing a cost of more than would build a new vessel by stopping important work for lack of having money in time to keep it going.

The uncertainty whether appropriations for the fiscal year ending June 30, 1915, would be made by or before that year opened caused, for example, the loss of nearly two weeks of the best season at the Beaufort, N. C., laboratory of the Bureau of Fisheries. In other words, the Government investment in this laboratory was idle for that time. The funds for the establishment of the Louisville and Orangeburg fish hatcheries being insufficient to complete their work and new appropriations being deferred, construction of those stations had to be suspended. This meant that the construction cost more to complete than it would have done had the work been carried on continuously and that there was an unavoidable depreciation in what had been done while waiting for further funds.

It has been customary in the fisheries service to send field parties out in June, but this year a number of them could not go until late July or early August. Here was a net loss of about one and one-half months in time and a loss greater than actually appears, because in many cases time was not sufficient to complete the investigation, which means that the material and equipment must be reassembled next year and traveling expenses again paid to complete problems which under favorable conditions would have been finished in one season.

For research work at the laboratories of the Bureau of Fisheries in Woods Hole, Mass., Beaufort, N. C., and Fairport, Iowa, we depend upon professors from colleges, who are glad to give their services in the summer months for a nominal compensation. They, however, require materials and facilities. This season, by reason of the delay in the appropriations, one of the investigators upon an important problem refused to continue because of the uncertainty, and others have advised the Bureau that if similar conditions continue they will not be able to serve the Government.

In Alaska (see p. 97) it was impossible in 1914 to continue the investigations of the salmon run in Wood River. This run had been counted for several years to determine what proportion of fish in a given stream might be taken without endangering the food supply. It is important to have consecutive annual comparisons of these figures, and a break in the series impairs the value of years of work.

Another serious loss in this connection arises from the fact that all leases (of which the Bureau of Fisheries has some 15) expired on June 30 and could not be renewed during the period before the appropriations became available, and the Government was left to the mercy of the property owners.

The Commissioner of Lighthouses advises me that the delay of appropriations until after the end of the fiscal year operates—

seriously to diminish the efficiency of the work, especially in connection with repairs construction, and supplies. The end of the fiscal year falls in the middle of the working season most advantageous for field work in most of the territory covered by the Lighthouse Service. When the appropriations for the following year are not then available except for short periods of time, it is impracticable to plan or carry out the field work in a comprehensive or efficient manner, and some of these necessary repairs involving larger amounts must be entirely deferred. The difficulty of making allotments from the appropriations when extended for brief intervals is seriously increased by the wide distribution of the work of this Service; such allotments must be made to district headquarters in Alaska, the Hawaiian Islands, and Porto Rico, as well as to 16 district offices within the United States. These brief extensions of appropriations also involve a material increase in clerical and accounting work throughout the Service, and they make it impossible to close any of the annual contracts for supplies for the Lighthouse Service.

An example of increased cost due to deferred appropriations occurred at the North Head Light Station, Wash., where the cost of improving the buildings and grounds was increased approximately \$300, or about 30 per cent of the original estimate. The delay in the appropriation, and consequently in making allotments thereunder, required that this work be carried out at an unfavorable season at an increased expense.

The Director of the Bureau of Standards says respecting these same delays:

There was inconvenience, delay, crowding of work, and consequent loss of efficiency. The delay was mainly in placing orders for apparatus and technical materials, which require a long time for delivery, and also delay in making new scientific appointments which often take several months to secure civil-service lists. Uncertainty as to the granting of new or increased appropriations delays the definite planning of new work.

The Commissioner of Navigation states:

As the legislative bill did not become law until July 16, we were unable to get out allotments to collectors of customs for the hire of motor boats to be used in the enforcement of the navigation laws until after that date, thus losing over two weeks in the height of the motor-boat season. The resolution of Congress giving us one twenty-fourth of the total appropriation of \$20,000 for this purpose did not warrant us in making any allotments.

The urgent deficiency bill, carrying the appropriation of \$15,000 for navigation inspectors to count passengers, did not become law until July 29. From July 1 until about August 1, therefore, we were unable to use these inspectors.

It is not at all my purpose in reviewing the above facts to make a criticism but rather to point out methods of economy that are available if their importance is understood. Causes quite beyond the control of anyone may of course operate to enforce delay, and reasons may exist which are imperative for a procedure which is in itself expensive. It is proper, however, for the information of all who may be concerned that the relations of these things to that efficient administration of the public service which all desire should be made clear.

No sane business man would ever judge of economy or extravagance in expenditure merely by the total. He would ask, "Was the expenditure needed?" "Was the money well spent?" and he would not regard with tolerance or consider economical the mere absence of expenditure, especially when it involved him either in larger future outlay or in greater cost of operation.

Respectfully,

WILLIAM C. REDFIELD,
Secretary.

REPORT OF THE SECRETARY OF LABOR.

DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, October 31, 1914.

To the PRESIDENT:

The second annual report of the Secretary of Labor is respectfully submitted for transmission to Congress in accordance with the requirements of section 9 of the organic act of the Department of Labor.

The purpose of the Department of Labor, expressly declared by the act of Congress creating it, is "to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment."

In these respects the administration of the department has continued in harmony with the policy outlined as follows in my first report:

There is, of course, no authority in that declaration to foster, promote, or develop for wage earners any special privileges, but the inference is irresistible that Congress did intend to conserve their just interests by means of an executive department especially devoted to their welfare.

Nor is there any implication that the wage earners in whose behalf this department was created consist of such only as are associated together in labor unions. It was created in the interest of the welfare of all the wage earners of the United States, whether organized or unorganized. Inasmuch, however, as it is ordinarily only through organization that the many in any class or of any interest can become articulate with reference to their common needs and aspirations, the Department of Labor is usually under a necessity of turning to the labor organizations that exist and such as may come into existence for definite and trustworthy advice on the sentiments of the wage-earning classes regarding their common welfare. Freely as conferences with unorganized wage earners are welcome, official intercourse with individuals as such has practical limits which organization alone can remove. Manifestly, then, the Department of Labor must invite the confidence and encourage the cooperation of responsible labor organizations and their accredited officers and

committees if it is to subserve its prescribed purpose through an intelligent and effective administration of its authorized functions.

While the Department of Labor sustains friendly relations with labor organizations, as in the interest of all wage earners and of the general welfare it ought to do, nevertheless this attitude must not be exclusive. Similar relations with unorganized wage earners, and also with employers and their organizations to the extent to which they themselves permit, are likewise a duty of the department.

The great guiding purpose, however—the purpose that should govern the department at every turn and be understood and acquiesced in by everybody—is the purpose prescribed in terms by the organic act, namely, promotion of the welfare of the wage earners of the United States. In the execution of that purpose the element of fairness to every interest is of equal importance, and the department has in fact made fairness between wage earner and wage earner, between wage earner and employer, between employer and employer, and between each and the public as a whole the supreme motive and purpose of its activities. The act of its creation is construed by it not only as a law for promoting the welfare of the wage earners of the United States by improving their working conditions and advancing their opportunities for profitable employment, but as a command for doing so in harmony with the welfare of all industrial classes and all legitimate interests, and by methods tending to foster industrial peace through progressively nearer realizations of the highest ideals of industrial justice.

An account somewhat in detail of the origin of this department is also embodied in my first annual report. The creation of such a department appears to have been continuously advocated by American labor organizations since 1865. From the beginning of this agitation until 1913 numerous measures more or less related to the subject were introduced in Congress, one of which, an act approved June 27, 1884, may be regarded as the legislative germ of the Department of Labor, for it established in the Department of the Interior the original Bureau of Labor. Though transformed in 1888 into an independent establishment known as the Department of Labor, the original bureau was not raised to the grade of an executive department; and in 1903 it again became a subordinate establishment under its first title, being placed, however, within the jurisdiction of the then newly created Department of Commerce and Labor. Ten years later, with its title altered to Bureau of Labor Statistics, the original Bureau of Labor was transferred to this department upon its creation by the act of March 4, 1913, entitled "An act to create a Department of Labor."

As created by and organized under that act the Department of Labor consists of the Office of the Secretary of Labor and of four subordinate bureaus—the Bureau of Labor Statistics, the Bureau of Immigration, the Bureau of Naturalization, and the Children's Bureau.

OFFICE OF THE SECRETARY.

In addition to the Secretary of Labor, the Office of the Secretary comprises one Assistant Secretary, a Solicitor of the Department of Justice for the Department of Labor, a chief clerk, a disbursing clerk, an appointment clerk, a chief of division of publications and supplies, and their several subordinates, besides an executive clerk in charge of the work of mediation and conciliation in labor disputes.

SECRETARY.

The Department of Labor as a whole (inclusive of its bureaus) is under the direction and supervision of the Secretary of Labor, who, in addition to his general duties as head of the department, is specifically empowered (1) to act as mediator in labor disputes and (2) to report to Congress a plan of coordination of the activities, duties, and powers of his office so far as they relate to labor and its conditions.

ASSISTANT SECRETARY.

Pursuant to statute the Assistant Secretary acts as Secretary of Labor under the Secretary's instructions, and also in the case of the death, resignation, absence, or sickness of the Secretary, unless otherwise directed by the President.

DEPARTMENTAL COMMITTEE.

In order to secure harmonious as well as efficient internal administration the Assistant Secretary serves as chairman of a departmental committee representative of the Office of the Secretary and of all the bureaus within the department and their statutory divisions. This committee has been organized upon the basis of reports of a temporary committee, of which also the Assistant Secretary was chairman until its dissolution. The temporary committee was appointed by the Secretary February 9, 1914, for the purpose of assisting him in the execution of his duties under section 10 of the organic act. Its reports were made and approved during the fiscal year covered by this report, but the permanent committee did not organize until September 2, 1914. Upon organization it took over, under the instructions of the Secretary, all the unfinished business of the temporary committee, which was thereupon dissolved.

The general function of the departmental committee as prescribed by those reports and approved by the Secretary of Labor is to investigate the activities of the various bureaus within the department to discover the points, if any, at which they overlap, and to submit to the Secretary from time to time, for his consideration, such

general or special rules as in their judgment will prevent duplication of work. But having been charged by the Secretary with responsibility for the unfinished business of the aforesaid temporary committee, the departmental committee is now, in addition to its permanent work, pursuing the work begun by its predecessor with reference to section 10 of the act creating the Department of Labor, on which the following observations were made in the first annual report of the Secretary:

No specific authority was conferred upon the Department of Labor by its organic act other than its authority with reference to mediation in labor disputes and to the functions of the four prior existing bureaus that have been placed under its jurisdiction. But in addition to the general declaration which formulates the purpose of the department, namely, to "foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment," the organic act did provide for the development of a specific plan for realizing that broad purpose. By section 10 the Secretary of Labor is required to "investigate and report to Congress a plan for coordination of the activities, duties, and powers of the present bureaus, commissions, and departments so far as they relate to labor and its conditions, in order to harmonize and unify such activities, duties, and powers, with a view to further legislation to further define the duties and powers of such Department of Labor." As that report is required by a different section of the organic act, and for a different purpose from the section and the purpose for which the annual report is required, it is understood in reference to plans of departmental organization that Congress contemplated a special report. Such a report will in due time be presented.

It is expected that the Secretary will be fully equipped before the close of the fiscal year 1915 to report to Congress in accordance with the foregoing interpretation of section 10 of the organic act of the department.

NEWS-RELEASE OFFICE.

So as to permit timely publication—without prejudice to public interests—of departmental information having news value, a news-release office under the supervision of the Assistant Secretary has been established. Although planned and ordered prior to the close of the fiscal year it did not organize until afterwards, owing to a temporary suspension of the order. This order, made by the Secretary June 12, 1914, directed the designation of an official in each bureau to submit reports at regular hours daily to the Assistant Secretary for his action with reference to their release for general publication. A meeting of the bureau officials so designated having been held for consultation on August 21, 1914, regulations in the matter were then established for the government of the bureaus. Under

these regulations news material originating in any branch of the department passes through the news-release office prior to release for publication—except such as may be given out in field or station service, and over this it is intended to maintain general supervision. In so far, also, as information about any of the work of the department is regarded by press representatives as having news value and may be published without prejudice to the service, it is made available for such use. The hours for distribution are 12 noon for afternoon papers and 4.30 p. m. for morning papers, the place of distribution being the office of the Assistant Secretary. This arrangement has not yet been in operation long enough to test its utility.

SOLICITOR.

By assignment of the Department of Justice the Solicitor is the chief law officer of the Department of Labor; and in some circumstances, by order of the President, he acts also as Secretary of Labor. Following is a summary of his work for the fiscal year 1914 as chief law officer of the department:

Legal opinions rendered, formal-----	123
Claims, workmen's compensation act, involving examination as to law and facts-----	2, 520
Contracts examined, approved, disapproved, drafted, redrafted, or modified-----	288
Leases examined and approved or disapproved-----	159
Bonds, contract, examined and approved or disapproved-----	63
Bonds, official, examined and approved or disapproved-----	4
Bonds, alien immigrants, examined and approved or disapproved-----	1, 909
Miscellaneous matters, embracing everything submitted for advice or suggestion of the solicitor or for the formulation of departmental action, not included in the foregoing items-----	598
Total number of matters disposed of-----	5, 604

CHIEF CLERK.

Subject to the Secretary of Labor, the chief clerk has oversight of the clerical and other subordinate work of the department, is charged with enforcement of department regulations, supervises the purchase of supplies, procures and superintends department quarters, and attends to such miscellaneous business of the Office of the Secretary as is not otherwise assigned.

Clerical service.—In order to secure indispensable clerical help it was necessary until the close of the fiscal year to detail several bureau employees to service in the Office of the Secretary. Subsequent appropriations have somewhat modified this necessity, but the practice is to a considerable extent imperative still, and provision should be made for completely obviating it. Although the multifarious work

of the Office of the Secretary can be done emergently by means of such makeshifts, a larger permanent force in this section of the department is needed for systematic service—and therefore for efficiency and economy—throughout the department.

The distribution of the force for the fiscal years 1914 and 1915 is shown in the following table, which also shows the increase of force for 1915 over 1914 and the number and distribution of details from bureaus in the early part of the fiscal year 1915:

Distribution of force in the Office of the Secretary.

Salaries.	Secretary.	Assistant Secretary.	Chief clerk.	Disbursing clerk.	Appointment clerk.	Division of conciliation.	Division of publications and supplies.	Total.	Increase over 1914.
\$12,000.....	(1) 1	(1) 1						(1) 1	1
\$5,000.....								(1) 1	1
\$3,000.....			(1) 1	(1) 1				(2) 2	2
\$2,500.....	(1) 1						(1) 1	(2) 2	2
\$2,100.....		(1) 1						(1) 1	1
\$2,000.....						1		1	1
\$1,800.....	(1) 1			1	(1) 1		(1) 1	(3) 4	4
\$1,600.....			1	(3) 2			1	(3) 4	4
\$1,400.....			(2) 1	(1) 2	(2) 2		(1) 2	(6) 7	7
\$1,200.....				(2) 1			(2) 3	(2) 4	4
\$1,000.....	1		1	(2) 2	2		(2) 2	(4) 6	6
\$900.....				1			(1) 1	(1) 2	2
\$840.....	(1) 2	(1) 1	(1) 1					(3) 4	4
\$720.....			(4) 10				(2) 2	(6) 12	12
\$660.....	(1)		(3) 5				(1) 3	(5) 8	8
\$480.....			1				(2) 2	(2) 3	3
\$240.....			(5) 8					(5) 8	8
Total..	(5) 6	(3) 3	(16) 29	(9) 10	(3) 3	1	(11) 18	(47) 70	23

NOTE.—(1) The figures inclosed in parentheses show the distribution of the force and the number in each grade as authorized under the appropriation act for 1914. (2) The figures for the year 1915, not in parentheses, do not include details from the various bureaus, which are as follows: One to the chief clerk's office from the Bureau of Immigration, \$1,800; 1 to the division of publications and supplies from Labor Statistics, \$1,600; 1 to the chief clerk's office from the Children's Bureau, \$1,600; 2 to the appointment clerk at \$1,200—1 of them from Children's Bureau and 1 from the Bureau of Naturalization; 1 to the division of publications and supplies from the Children's Bureau, \$1,000; 1 to the division of publications and supplies from the Bureau of Immigration, \$900; and 1 to the division of publications and supplies from the Bureau of Naturalization, \$1,000; making the total number of details 8.

Faithful service, deserving of recognition under all circumstances, deserves it doubly when, as in the Department of Labor ever since its organization, the work performed has been extraordinary and often excessive. Not by means of details alone has the work of the Office of the Secretary been accomplished. A generous disposition on the part of both the regular and detailed employees has contributed largely. They have willingly done extra work for the relief of associates burdened with extraordinary duties, and in the same spirit and by way of helping out they have worked overtime and frequently at unusual kinds of work. This disposition has not been peculiar to the clerical force. It has appeared among laborers, messengers, and clerks alike. The grateful acknowledgments of the department are hereby offered to all to whom the Government is in this manner indebted for the department's efficiency.

Department quarters.—The department began its work in crowded quarters, a condition which continued until the middle of October in its second fiscal year. Even then the embarrassments incident to the crowding did not end. In my first annual report the circumstances were correctly explained, as follows:

This congestion continued until the removal, about the middle of October, of the Department of Commerce from the Willard Building to its new building at Nineteenth Street and Pennsylvania Avenue NW. Even then the embarrassment did not end. Congress having assumed that the four bureaus of the Department of Labor could be afforded space in that building, which had been erected for the accommodation of the former Department of Commerce and Labor and all its constituent parts, only \$5,000 for rent of offices for the Office of the Secretary during the remainder of the fiscal year ending June 30, 1914, was appropriated by the act of October 22, 1913. This was not enough for the emergency. Occupancy of the new building by both departments would have interfered with plans of the Department of Commerce, which contemplated occupying the entire premises to the exclusion of the Department of Labor and all its bureaus. Further embarrassments also arose. The leases which the Department of Commerce, as sole successor to the Department of Commerce and Labor, had acquired for the building in which its executive offices and their branches and those of this department were quartered, ran only until October 15, 1913. There was danger, therefore, that the Department of Labor, with but \$5,000 available for rent for the remainder of the fiscal year from October 15, 1913, to June 30, 1914—the amount appropriated by the act of Congress last cited—would be wholly without office accommodations.

This difficulty was finally overcome through a contract with the owners of the Willard Building, supplemented by a concession from the Department of Commerce. The former Department of Commerce and Labor having paid an annual rental of \$11,830 for the Willard Building, the owners of that building agreed to accept from this department for the remainder of the fiscal year (from the end of the lease to June 30, 1914) the total amount at the disposal of the department for rent, namely, \$5,000. Acceptance of that offer, however, would have accomplished little but for a concession by the Department of Commerce, which provided temporary quarters for one of the bureaus of the Department of Labor—the Bureau of Labor Statistics.

At that time the Department of Labor and all its bureaus except the Bureau of Labor Statistics were quartered in the Willard Building, where they remained until July, 1914. The quarters were then transferred to the Mills Building, at the corner of Pennsylvania Avenue and Seventeenth Street NW.

This building would afford ample accommodation were the necessities of the department unaltered. But the coming into department quarters of the Bureau of Labor Statistics (the first time in its history that it has been under the same roof with its supervising depart-

ment) and a large expansion of the work and office force of the Children's Bureau—highly desirable changes, both of them—have put considerable pressure upon the department's space in the Mills Building as now partitioned. Judicious changes may economize space while also promoting unity of departmental administration, but the disquieting fact remains that there is no present assurance of a reasonably permanent tenure.

The Mills Building had been occupied for some years by a branch of the Navy Department, the rental for its last year of occupancy having been \$30,000. This was the rental at which the building was held by its owners after the Navy Department left it and until July, 1914. The Department of Labor then secured a lease for all of it except the southeast corner of the ground floor for \$16,500, the total amount which Congress had appropriated for rent for the Department of Labor for the fiscal year 1915. But this lease is for one year only. It is not believed that quarters can be secured for the department for the ensuing year at these figures.

In all probability the most economical, certainly the most generally satisfactory method of solving the problem of department quarters, would be the construction of a commodious Government building on one of the many sites already owned by the Government. Until this is done, however, it is important, with reference both to economy and efficiency, that frequent removals be avoided. Though not yet two years old, the Department of Labor has been put to the necessity of making expensive and disturbing removals twice. A five years' lease of 60,000 square feet of space subject to convenient partitioning would promote efficiency and make for economy in the department and its bureaus. But such provision should be preliminary to and not in substitution for a Government building.

DISBURSING CLERK.

The disbursing clerk is responsible for the safe custody and lawful expenditure of appropriations made by Congress for the support of the Department of Labor and its branches and is accountable for naturalization fees transmitted to him daily through the Bureau of Naturalization in separate remittances aggregating thousands of items in the course of a year. His duties necessitate the employment of a considerable clerical force, and as he is financially responsible both for the legal validity and correctness of the claims he pays—including salaries, transportation, and demands under special contracts—and for the fidelity of his subordinates as well as himself a substantial bond is required of him.

Appropriations.—For the fiscal year ended June 30, 1914, the appropriations by Congress to the department and its subsidiary establishments were as follows:

	Annual ap- propriations, 1914.	Appropriations for public works.	Special appropriation.	Total.
Office of Secretary of Labor.....	¹ \$129,317.50			\$129,317.50
Bureau of Immigration.....	2,742,240.00	\$428,000.00	\$1,000.00	3,171,240.00
Bureau of Naturalization.....	302,460.00			302,460.00
Bureau of Labor Statistics.....	175,250.00			175,250.00
Children's Bureau.....	25,640.00			25,640.00
Allotment for printing and binding.....	114,000.00			114,000.00
Total.....	3,488,907.50	428,000.00	1,000.00	3,917,907.50

¹ Includes \$50,497.50 transferred from Department of Commerce.

² Includes \$81,000 transferred from Department of Commerce.

Expenditures.—The disbursing clerk's report of expenditures during the fiscal year includes payments of obligations previously incurred and excludes payments for that year subsequently made. Arranged in accordance with the larger itemization of the appropriation acts, it is as follows:

Office of the Secretary:

Salaries, Office of Secretary of Labor, 1913.....	\$1,972.56
Contingent expenses, Department of Labor, 1913.....	10,523.43
Salaries, Office of Secretary of Labor, 1914.....	59,492.34
Contingent expenses, Department of Labor, 1914.....	44,414.89
Expenses of commissioners of conciliation, 1914.....	5,490.63
Rent, Department of Labor, 1914.....	4,399.89
Total	<u>126,293.76</u>

Bureau of Immigration:

Salaries, Bureau of Immigration and Naturalization, 1913....	5,796.88
Expenses of regulating immigration, 1913.....	193,310.40
Expenses of regulating immigration, 1912.....	994.39
Immigrant station, Charleston, S. C.....	1,850.00
Immigrant station, Ellis Island, N. Y.....	385,044.17
Immigrant station, Galveston, Tex.....	2,561.99
Immigrant station, New Orleans, La.....	35,387.17
Immigrant station, Philadelphia, Pa.....	22,308.45
Immigrant station, San Francisco, Cal.....	16,614.29
Immigrant station, Chicago, Ill., 1914.....	18,817.49
Salaries, Bureau of Immigration, 1914.....	73,561.16
Expenses of regulating immigration, 1914.....	2,476,707. ² 4
Payment to Barbara Kauffels.....	1,000.00
Total	<u>3,233,954.13</u>

Bureau of Naturalization:

Miscellaneous expenses, Division of Naturalization, 1912....	2.08
Miscellaneous expenses, Division of Naturalization, 1913.....	19,126.72
Salaries, Bureau of Naturalization, 1914.....	69,269.98
Miscellaneous expenses, Bureau of Naturalization, 1914.....	205,705.37
Total	<u>294,104.15</u>

Bureau of Labor Statistics:

Salaries, Bureau of Labor, 1913.....	\$4, 088. 51
Miscellaneous expenses, Bureau of Labor, 1912.....	602. 43
Miscellaneous expenses, Bureau of Labor, 1913.....	5, 952. 60
Medical examination of injured employees, 1913.....	26. 00
Library, Bureau of Labor, 1913.....	173. 68
Salaries, Bureau of Labor Statistics, 1914.....	93, 816. 53
Miscellaneous expenses, Bureau of Labor Statistics, 1914.....	58. 934. 22
Library, Bureau of Labor Statistics, 1914.....	767. 77
Medical examination of injured employees, 1914.....	2, 564. 25
International Congress on Social Insurance.....	108. 84
Total	167, 034. 83

Children's Bureau:

Salaries, Children's Bureau, 1913.....	1, 055. 87
Salaries, Children's Bureau, 1914.....	24, 361. 08
Total	25, 416. 95
Grand total	3, 846, 803. 76

In addition to disbursements by the disbursing clerk the following expenditures in behalf of the department have been specially made:

By special disbursing agents in the Immigration Service.....	\$39, 949. 96
Claims settled by the Auditor for the State and Other Departments.....	3, 482. 24
Total	43, 432. 20

A significant contrast.—Adding the two items of the last table above to the disbursing clerk's report of expenditures, it appears that the total expenditures in behalf of the Department of Labor and all its branches during the fiscal year were \$3,890,235.96. But the cost to the Government is much less. Considering as earnings the income from special revenues due to or connected with the work of the Department of Labor, the earnings for the fiscal year were \$1,785,-838.86 more than its expenditures. The disbursing clerk reports these special revenues as follows:

Bureau of Immigration:

Head tax.....	\$5, 104, 826. 00
Fines	101, 674. 00
Court costs.....	1, 007. 20
Exclusive privileges.....	14, 274. 01
Telephone service and sale of ice.....	2, 563. 16
Forfeiture of bond	1, 000. 00

Bureau of Naturalization:

Naturalization fees.....	450, 228. 55
Interest on naturalization fees.....	330. 27
Proceeds of sale of condemned property.....	171. 63
Total	5, 676, 074. 82

If from the total of this table—a total of items which may properly be regarded as earnings of the Department of Labor—we deduct

the total expenditures of the department and its branches as shown in the table immediately preceding, the following comparison results:

Earnings of the department for the fiscal year 1914.....	\$5, 676, 074. 82
Expenditures of the department for the fiscal year 1914.....	3, 890, 235. 96

Excess of earnings over expenditures.....	1, 785, 838. 86
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A comparison of appropriations for the year with the earnings results as follows:

Earnings of the Department of Labor for the fiscal year 1914....	\$5, 676, 074. 82
Appropriations to the Department of Labor for the fiscal year 1914.....	3, 917, 907. 50

Excess of earnings over appropriations ¹	1, 758, 167. 32
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Unexpended balances.—In accordance with the act of Congress of June 20, 1874 (18 Stat., 110, 111), the following unexpended appropriations were covered into the surplus fund of the Treasury Department June 30, 1914:

Salaries, Bureau of Labor, 1912.....	\$1, 822. 22
Miscellaneous expenses, Bureau of Labor, 1912.....	527. 16
Library, Bureau of Labor, 1912.....	. 52
Medical examination of injured employees, 1912.....	2, 826. 66
Salaries, Bureau of Immigration and Naturalization, 1912.....	3, 861. 71
Expenses of regulating immigration, 1911.....	. 99
Expenses of regulating immigration, 1912.....	53, 481. 10
Miscellaneous expenses, Division of Naturalization, 1912.....	2, 129. 46
Additional assistants to clerks of courts in naturalization cases.....	1, 496. 95
	66, 146. 77

Appropriations amounting to \$310,178.98 for the construction of an immigrant station at Boston, Mass., and \$100,000 for the Commission on Industrial Relations, which had been carried on the books of this department, were respectively transferred during the year to the Treasury Department (act of October 22, 1913) and the Commission on Industrial Relations.

DIVISION OF PUBLICATIONS AND SUPPLIES.

The chief of this division has charge of the business of the Department of Labor and its bureaus with the Government Printing Office. He also purchases, stores, and distributes its supplies.

Prior to the creation of the Department of Labor those two functions of the Office of the Secretary of Commerce and Labor were administered in two distinct branches, one for the preparation and distribution of department publications and the other for the purchase and distribution of supplies. The corresponding functions of the Department of Labor were consolidated upon its organization, and experience proves the economy and efficiency of the change.

Printing and binding.—In accordance with the act of May 1, 1913, making appropriations for expenses incident to the first session of

¹A deduction from this total must of course be made for expense incurred by the Treasury Department for examination at immigration stations by the Public Health Service.

the Sixty-third Congress, the Department of Labor received from the Department of Commerce as its proportion of the allotment for printing and binding provided in the act making appropriations for sundry civil expenses of the Government for the fiscal year 1914 the sum of \$84,000, which sum the Secretary of Labor allotted as follows:

Children's Bureau	\$9,300
Bureau of Labor Statistics.....	32,500
Bureau of Immigration.....	5,100
Division of Information.....	2,300
Immigration Service.....	18,600
Bureau of Naturalization.....	1,400
Naturalization Service and naturalization examiners.....	13,925
Secretary's Office.....	875
	84,000

This sum having been augmented by the urgent deficiency bill approved April 6, 1914, with an appropriation of \$30,000, the total amount available for printing and binding for the fiscal year 1914 was \$114,000. In order to utilize as much of this amount as its necessities required, the department aimed to make full requisition upon the Public Printer, but the total of bills from him for completed work during the fiscal year amounted to no more than \$106,746.64, which left an unexpended balance to the credit of the department of \$7,253.36. Owing to a congestion of work in his office many of the orders had been unfilled at the year's end, and this uncompleted and unbilled work, estimated at \$25,133.32, must by law be carried over as a fixed charge against the department's printing allotment for the fiscal year 1915. Nor can the balance of \$7,253.36 mentioned above as remaining to the credit of the department at the close of the year 1914 be treated as an offset. Under the law this balance must be covered back into the Treasury, notwithstanding the department's continued obligation for orders originally made upon the Public Printer under appropriations of which the balance now unavailable is part.

Requisitions for printing and binding are subjected to the scrutiny of the division of publications and supplies. Its duty is to see that publications comply with department rules and with the typographical style of the Government Printing Office and to detect and report erroneous or otherwise objectionable matter that may inadvertently creep into "copy" or proofs. The limited force of this division has striven to perform these duties accurately without unduly delaying department publications.

A standard departmental style has been aimed at and duplication of printing is avoided as much as possible. As a result several printed forms have been simplified and others discontinued.

During the first three months of the fiscal year the department, possessing no facilities of its own, was forced to rely upon the division

of publications of the Department of Commerce for its duplicating and mailing work. But, suitable machinery having been provided, the division has expeditiously and satisfactorily handled all the department's duplicating and mailing work since October, 1913. During the year 380 requisitions for duplicating work, comprising 304,591 copies of form letters, blank forms, etc., were filled by the division.

There were furnished through the office of the Superintendent of Documents 355,939 copies of publications on mailing lists and franks. In connection with this work the division furnished to the Superintendent of Documents 56,035 franks. Special effort has been made to simplify the mailing methods of the department with a view especially to avoiding duplication. In furtherance of this policy instructions have been given to strike from the mailing lists such libraries as, being public depositories, are entitled under the law to receive publications direct from the Superintendent of Documents.

The inconveniences and delays incident to compliance with section 8 of the act of August 23, 1912, to which attention was called in my first annual report, continue. Under that law the work of addressing, wrapping, and mailing the department's publications must be done in the Government Printing Office. To this requirement there is no objection in so far as permanent mailing lists are concerned, but with reference to individual requests prompt delivery is often impossible.

Printing and binding, 1915.—The department's allotment of the printing and binding appropriation for the year ending June 30, 1915, has been distributed as follows:

Children's Bureau.....	\$15, 000
Bureau of Labor Statistics.....	48, 000
Bureau of Immigration.....	5, 500
Division of Information.....	2, 500
Immigration Service.....	18, 000
Bureau of Naturalization.....	2, 000
Naturalization Service and naturalization examiners.....	15, 000
Secretary's Office.....	9, 000
Total	115, 000

Supplies.—Under the act of May 1, 1913, cited above, the department received by transfer from the Department of Commerce, as its proportion of the amount provided by the legislative, executive, and judicial appropriation act for 1914, for contingent expenses of its offices and bureaus, the sum of \$26,100, and for the Immigration Service at large the sum of \$13,500, making \$39,600 in all. To this amount the urgent deficiency act approved October 22, 1913, added \$10,000, and out of the total of \$49,600 all the miscellaneous expenses of the department for which other provision was not specifically made had to be met. By carefully confining its requisitions to

indispensable supplies, the department finished the fiscal year with a balance to its credit of \$81.21, which, however was hardly more than sufficient to meet its outstanding obligations.

From lack of funds with which to procure suitable conveyances the department had to depend on the Department of Commerce for deliveries of its mail and freight until May 7, 1914. It then received by transfer from the Department of Commerce one horse and wagon, with which limited equipment it has since managed to handle this work.

During the fiscal year there were filled, for offices outside of Washington, 6,649 requisitions for blank forms, calling for 9,869 books and 8,010,694 blanks, 156 requisitions for printed stationery, and 550 requisitions for supplies, while 29,274 packages or boxes aggregating in weight 245,189 pounds were shipped. A large proportion of the books and blanks went by registered mail. The figures do not include requisitions for books, blanks, printed stationery, and supplies furnished to offices in Washington.

Employees.—At no time since the creation of the Department of Labor has the number of employees in the division of publications and supplies been adequate.

APPOINTMENT CLERK.

All clerical work incident to changes in the personnel of the department and its bureaus is under the charge of the appointment clerk, and the service records of all employees are in his custody. In order that appointments, transfers, details, removals, and changes in compensation may conform to legal limitations he is further required to examine into and report upon the facts involved and the civil-service rules and regulations that apply.

From lack of clerical assistance work in this branch of the office, as in other branches and from the same cause, had fallen somewhat behind at the close of the fiscal year, but with the addition of two clerks detailed from bureaus and by means of working overtime the work has now been brought to a point at which official inquiries regarding the records of employees can be answered promptly.

During the fiscal year the appointment clerk has prepared nearly 5,000 pieces of official mail, as follows:

For the signature of the Secretary_____	254
For the signature of the chief clerk _____	1, 296
Notices of appointments, etc. _____	1, 313
Miscellaneous _____	2, 081

Efficiency ratings.—A department board, consisting of the appointment clerk as chairman and a representative of each bureau, has been organized to formulate a uniform plan for preparing such information as the Civil Service Commission may require under the act of Congress approved August 23, 1912, which provides as follows:

The Civil Service Commission shall, subject to the approval of the President, establish a system of efficiency ratings for the classified service in the several executive departments in the District of Columbia based upon records kept in each department and independent establishment with such frequency as to make them as nearly as possible records of fact. * * * Copies of all records of efficiency shall be furnished by the departments and independent establishments to the Civil Service Commission for record in accordance with the provision of this section.

Employees.—The following table shows the number of officials and employees in the department at the close of the fiscal year in comparison with the number on the 1st of August, 1914, after an increase had been authorized by the legislative, executive, and judicial appropriation act for the fiscal year 1915. Figures in parentheses represent the number at the close of the fiscal year 1914, those not in parentheses representing the number on the 1st of the following August.

Employees of Department of Labor for fiscal year 1914 and on Aug. 1, 1914.

Bureau or office.	Statutory.	Non-statutory.	Total.	In District of Columbia.	Outside of District of Columbia.	Increase.
Office of the Secretary.....	70	—	(47) 70	70	—	23
Bureau of Immigration.....	58	1,750	(1,718) 1,808	63	1,745	90
Bureau of Naturalization.....	59	73	(126) 132	59	73	6
Bureau of Labor Statistics.....	94	—	(94) 94	94	—	—
Children's Bureau.....	76	—	(15) 76	76	—	61
Commissioners of conciliation.....	—	13	(0) 13	—	13	113
Total ¹	357	1,836	(2,000) 2,193	362	1,831	193

¹ Temporarily employed on mediation and conciliation work in industrial disputes, so that the actual increase of positions in the department is 180.

² The table does not include emergency employment of guards, interpreters, stenographers, etc., in the field force of the Bureau of Immigration, of which there were 180 on Aug. 1, 1914.

The presidential appointments included in the foregoing table were as follows, senatorial confirmation being required except as indicated by the asterisk:

Presidential appointees in the Department of Labor, their compensation, tenure, and the authority under which appointed.

Position.	Compensation per annum.	Tenure.	Authority.
Secretary of Labor.....	\$12,000	Indefinite.....	Act of Mar. 4, 1913.
*Assistant Secretary of Labor.....	5,000	do.....	Do.
Commissioner of Labor Statistics.....	5,000	4 years, unless sooner removed.	Do.
Commissioner General of Immigration.....	5,000	Indefinite.....	28 Stat., 780.
Commissioner of Immigration at— New York, N. Y.....	6,500	4 years, unless sooner removed, and until successor is appointed.	28 Stat., 391.
Baltimore, Md.....	4,000	do.....	Do.
Boston, Mass.....	4,000	do.....	Do.
New Orleans, La.....	2,900	do.....	Act of Aug. 1, 1914.
Philadelphia, Pa.....	4,000	do.....	28 Stat., 391.
San Francisco, Cal.....	4,000	do.....	Do.
San Juan, P. R.....	3,600	do.....	Do.
Seattle, Wash.....	4,000	do.....	Do.
Chief of the Children's Bureau.....	5,000	Indefinite.....	Act of Apr. 9, 1912.

Changes in personnel were as follows during the fiscal year:

Appointments.

Bureau or office. *	Permanent.				Temporary.	Grand total.
	Competitive.	Ex-cepted.	Un-classified.	Total.		
Office of the Secretary.....	7	2		9	11	20
Bureau of Immigration.....	190	37	19	246	99	345
Bureau of Naturalization.....	16	2		18	34	52
Bureau of Labor Statistics.....	14			14	77	91
Children's Bureau.....	5			5	5	10
Commissioners of conciliation.....		15		15		15
Total.....	232	56	19	307	226	533

Separations and miscellaneous changes.

Bureau or office.	Separations.					Total.	Miscellaneous changes.
	From permanent positions.				From temporary positions.		
	Competitive.	Ex-cepted.	Un-classified.	Total.			
Office of the Secretary.....	4	2	2	8	2	10	14
Bureau of Immigration.....	159	32	15	206	50	256	417
Bureau of Naturalization.....	16	-----	1	17	17	34	64
Bureau of Labor Statistics.....	17	-----	-----	17	11	28	52
Children's Bureau.....	3	-----	-----	3	-----	3	5
Commissioners of conciliation.....	-----	1	-----	1	-----	1	3
Total.....	199	35	18	252	80	332	555

The following table shows the number of transfers to and from the department during the period ended June 30, 1914:

Transfers.

Bureau or office.	From—											To—	Grand total.
	War Department.	Interior Department.	Department of Commerce.	Treasury Department.	Department of Justice.	Navy Department.	Panama Canal.	Philippine civil service.	Smithsonian Institution.	Post Office Department.	Civil Service Commission.	Government Printing Office.	
Office of the Secretary.....			2			1					1	4	4
Bureau of Immigration.....	1	4	5	1		2	6	1		1	21	1	22
Bureau of Naturalization.....	3	4	2			1					10	1	11
Bureau of Labor Statistics.....										1	1	1	2
Children's Bureau.....			1								1		1
Total.....	4	4	8	6	1	2	2	6	1	1	1	37	40

MEDIATION AND CONCILIATION IN LABOR DISPUTES.

The Secretary of Labor is empowered to mediate in labor disputes, and in his discretion to appoint commissioners of conciliation, his authority coming from section 8 of the organic act of the department, the precise terms of which in this respect are as follows:

That the Secretary of Labor shall have power to act as mediator and to appoint commissioners of conciliation in labor disputes whenever in his judgment the interests of industrial peace may require it to be done.

Of all the functions of the Department of Labor which it is yet possible to administer, this one may be reasonably regarded as the most important. Suggesting with reference to labor disputes a development of diplomatic duties in the Department of Labor analogous to those in the Department of State with reference to international disputes, it points to a Federal administrative system for promoting and fostering industrial peace; not a peace of the Warsaw order, but one of mutual benefit and good will.

Primarily the Department of Labor must conserve in industrial disputes the interests of the wage earners of the United States. Such is its duty under the law of its creation, the first section of which charges it with responsibility for their general welfare while the eighth makes this responsibility specific as to labor disputes. And those interests are exceptional in their magnitude. Not only do wage earners constitute in number more than a third of our total population, but in financial respects also their aggregate interests are vast. It is doubtful if any vocational interests represented in our governmental system exceed in volume or public importance those of the wage earners of the United States.

But though the Department of Labor represents primarily the wage-earning interests in labor disputes, its ideal is to make its representation similar in character to that of the Department of State, which, while representing the interests of this country in disputes between it and other countries, does so with fairness toward all countries. Accordingly the policy of the Department of Labor, though it executes its mediation and conciliation functions as the governmental representative of wage-earning interests, is to do so without partisanship or prejudice, but with fairness to every interest concerned.

Commissioners of conciliation.—The powers conferred upon the Secretary of Labor by section 8 of the organic act must for the most part be administered through the commissioners of conciliation whom he is by the same section authorized to appoint. But no appropriation for that purpose was made by Congress until October 22, 1913, when a deficiency bill for the fiscal year 1913 appropriated the sum of \$5,000. This appropriation, however, was limited in its disbursement to the expenses of commissioners. Nothing for their

compensation was appropriated until April 6, 1914. The urgent deficiency bill of that date appropriated the further sum of \$20,000 for the fiscal year 1914, authorizing the disbursement of this amount for compensation as well as for expenses. The total appropriations, therefore, for the mediation and conciliation service of the department from its organization to the close of its second fiscal year were only \$25,000, of which \$5,000 was available for commissioners' expenses alone and \$20,000 for their compensation or expenses or both as might be needed.

Until the second of these appropriations—13 months after the creation of the department and within 3 of the close of its second fiscal year—only employees of the Government detailed from their regular duties could be utilized for conciliation purposes, which was a serious handicap. A subsequent appropriation of \$50,000 is available only for the fiscal year 1915.

Executive clerk.—Not until the fiscal year of the present report had come to a close was there any possibility of systematizing the mediation and conciliation work. Although the appropriation of April 6, 1914, provided to the extent of \$20,000 for compensation and traveling expenses of commissioners of conciliation, no commissioner could be assigned to supervisory work. They could not serve for that purpose in the District of Columbia, owing to a restrictive statute with reference to appropriations; and even if that statute had not interfered, the language of the statute making the appropriation restricted their pay to a per diem while actually employed in particular cases. But after the fiscal year had closed, limited provision was made for organizing this work. It was made by the same clause of the legislative, executive, and judicial appropriation act for the fiscal year 1915 which made the \$50,000 appropriation mentioned above. The clause is as follows:

To enable the Secretary of Labor to exercise the authority vested in him by section 8 of the act creating the Department of Labor, and to appoint commissioners of conciliation, including an executive clerk at \$2,000 per annum, which is hereby authorized, and for their services in the District of Columbia and elsewhere, and for their traveling expenses and subsistence while so employed, \$50,000, or so much thereof as may be necessary.

Pursuant to this authority an executive clerk has been appointed, who, under the direction of the Secretary of Labor, is systematizing and superintending the mediation and conciliation work of the Office of the Secretary as completely as the appropriation for this phase of that service and the necessary limitations of a clerical function permit.

He has prepared blank forms for office use and for the use of commissioners of conciliation. He attends to all correspondence of the Secretary of Labor regarding labor disputes and has charge of the

vouchers, pay rolls, etc., of the commissioners. With the approval of the Secretary he drafts letters of authority and instructions to the commissioners as occasion demands, prepares briefs of their intermediate and their final reports, and keeps the Secretary regularly informed of the facts regarding labor disputes brought to the attention of the department and of the progress of its efforts at mediation therein.

MEDIATIONS.

Notwithstanding the lack of systematic assistance which the executive clerk now supplies and of the necessity that still rests upon the Secretary of Labor of giving initial attention to details that should first be sifted through a specialized division, in addition to difficulties naturally incident to administering Federal functions of a novel character, remarkable success has attended the mediation and conciliation work of the department. For the period from March 4, 1913, to the close of the fiscal year ending June 30, 1914, this work had made appreciable progress; and since July 16, 1914, when the appointment of an executive clerk was authorized and systematic organization of the work began, its usefulness has become progressively more evident. Altogether more than 30 labor disputes have been adjusted to the satisfaction of both sides, to the advantage of their respective industrial interests, and to the benefit of their respective communities. The failures have been few.

All the work of this branch of the Office of the Secretary since the creation of the department and which had been concluded at the date of the present report is submitted below, so much of it as was described in my first annual report being resubmitted by quotation.

New York, New Haven & Hartford Railroad clerks.—Following is the report of last year on this the first mediation work of the department:

The first of these disputes was between the New York, New Haven & Hartford Railroad Co. on one side and its clerks (members of the Brotherhood of Railway Clerks) on the other. After several conferences between the two had failed to bring about a satisfactory adjustment, they made a joint request, May 24, 1913, for mediation by the Secretary of Labor.

Mr. G. W. W. Hanger (then chief statistician of the Bureau of Labor Statistics and Acting Commissioner of Labor Statistics)¹ having been thereupon detailed as commissioner of conciliation, the matters at issue were taken up by him in conference with each of the parties at New Haven, Conn. These conferences continued until June 2, 1913, when a satisfactory adjustment was secured, covering all points at issue. The controversy hinged mainly on different interpretations of a prior agreement as to rules governing wages, seniority rights, and other conditions of employment which had been

¹ Now secretary and assistant commissioner of the Board of Mediation and Conciliation under the Newlands-Clayton Act, approved July 15, 1913.

made by the clerks' organization with a previous general manager of the railroad in January, 1913.

In evidence of the adjustment secured through Mr. Hanger as commissioner of conciliation, a formal joint agreement was signed June 2, 1913, by the general manager in behalf of the railroad and by the vice grand president of the Brotherhood of Railway Clerks in behalf of the clerks.

Erie Forge Co.—This mediation is described in the report of last year as follows:

Another of the labor disputes adjusted satisfactorily by conciliation through this department arose in the works of the Erie Forge Co. at Erie, Pa. A strike had begun before the president of the company knew it was brewing or suspected any grievances. Requests for mediation were made to the Department of Labor on the 17th of June, 1913. As in the first case noted above, these requests came from both sides. In response, the Secretary of Labor appointed the Assistant Secretary as commissioner of conciliation, and on the 20th of June cordial relations were restored.

This dispute having been caused by friction between wage earners and foremen, the resulting strike was apparently due to the fact that no contractual arrangement of a responsible kind existed with the employer, under which friction might be abated and grievances adjusted before a strike had excited hot blood. An agreement guarding against such contingencies in future was the principal characteristic of the settlement secured.

Under this settlement the Erie establishment, which seems to have been liberally conducted as to wages and working conditions, was thereafter to be managed with reference to wage earners about as before except in one particular. A plan was established for bringing disturbing grievances to the personal attention of the president of the company by providing definitely for appeals from foremen to superintendent and from superintendent to president. Up to this point the agreement inures to the benefit of all wage earners in the establishment regardless of union membership. Such of them as do not belong to a union are now guaranteed a hearing by their court of last resort, the responsible employer. Those who do belong to unions, while they also are guaranteed this primary appeal to the head of the employing establishment, have the further right of appeal from him to their national labor organizations. Meanwhile, as the agreement is signed jointly by the employer and the national officers of the organized wage earners, the employer is reasonably secure from strikes which he may wish to avert. No dispute can very likely expand into a strike unless, with knowledge of all the circumstances, both the responsible employer and the national officials of the labor organization concerned deliberately conclude that the strike can not be averted.

The department is informed that this agreement, after a year's experience with it, has been voluntarily renewed.

Reading Railroad car workers.—Following is the report of last year in this case:

A strike or lockout in the shops of the Philadelphia & Reading and the Lehigh Valley Railroads had been in progress since the fall

of 1912, and the Department of Labor and Industry of Pennsylvania had been called upon to mediate. At the request of that department this department offered its good offices also, naming Mr. Hanger as commissioner of conciliation. A satisfactory agreement was consequently signed at Reading, Pa., July 12, 1913, by the general manager of the company, the representative of the International Association of Car Workers, the Pennsylvania commissioner of labor, and the commissioner of conciliation for this department. Subsequently unexpected friction arose which delayed final settlement. But the Department of Labor and Industry of Pennsylvania informed this department, by letter of July 17, 1913, that the conditions causing the friction were not within the control of the representatives of either department, and that the work of the two representatives had "done much toward bringing the management and employees together."

Reading Hardware Co.—While Mr. Hanger was acting as commissioner of conciliation for this department in connection with the Reading Railroad dispute reported above, a request for mediation in a factory strike in Reading, Pa., reached the department about June 17, 1913. This case was reported upon last year, as follows:

The request came from the wage-earning side, but the employers acquiesced in the proffered mediation. Thereupon this department arranged for cooperation with the State Department of Labor and Industry of Pennsylvania, Mr. Hanger representing this department as commissioner of conciliation. He and his coadjutor of the Pennsylvania department were received in a conciliatory spirit by the employers concerned, and the strike was brought to an end by mutual agreement on the 17th of July—one month after the request for mediation.

Baltimore & Ohio Railroad shops.—In another dispute the request for mediation was made by representatives of the wage earners and acquiesced in by the employers. It came to the department on the 21st of July, 1913, and, quoting now from the first annual report, "had arisen in the shops of the Baltimore & Ohio Railroad system, where a 'strike vote' was then in progress over a question of objectionable working conditions." The report for last year continues:

The Secretary responded to the request for mediation by appointing John A. Moffitt as commissioner of conciliation, detailing him from the Immigration Service. Upon Mr. Moffitt's tender of the good offices of this department, the appropriate officials of the railroad company took the dispute into consideration. As a result of the mutual concessions that followed, each side animated by conciliatory impulses, a satisfactory settlement was made, whereby an impending strike that must have been prejudicial to both parties and to the public was averted.

Western Maryland Railroad shops.—Another railroad strike which was averted through the mediation of the Secretary of Labor was

impending in November, 1913, in the shops of the Western Maryland Railroad. To quote from the first annual report:

Owing to a labor dispute in one shop a small strike began there, but, in consequence of efforts promptly made by the national officers of the wage earners' organizations affected, an understanding was reached. In effect, it was understood that the striking wage earners should on their part return to work and that on the part of the employer their grievances should be immediately considered for adjustment. Upon their return to work, however, some of their number (so they averred) were refused reemployment. This situation was rapidly developing a strike in all the shops of the railroad system when mediation by the Secretary of Labor was requested by national representatives of the wage earners' organizations concerned. Communication between the department and the president of the railroad having thereupon been opened and the president having responded courteously and favorably to the department's suggestions, the dispute was adjusted by mutual arrangement between the parties and without any of the bitterness or losses of an industrial conflict.

Chicago & Alton Railroad shops.—Again quoting from the first annual report:

A settlement has been similarly effected in another dispute in railroad shops—the machine shops of the Chicago & Alton Railroad. There was a strike impending when a request for mediation was made by the wage earners concerned October 28, 1913. Upon their petition the Secretary of Labor appointed¹ James Hogan, of the Immigration Service, as commissioner of conciliation. His overtures being accepted by the railroad, the disputed points involved in the controversy—37 in all—were adjusted in December by mutual concessions and agreement. A full settlement was thus secured and the strike averted.

Indianapolis street car strike.—In this dispute a sensational strike could have been averted by the conciliatory spirit which on both sides characterized the settlement of the disputes described above. For lack of that spirit it went to an extreme. The dispute arose in October, 1913, in connection with the electric street railway system in Indianapolis. Mediation by the Secretary of Labor having been requested by the wage-earning side of the dispute, action was taken as reported on page 16 of the Secretary's first annual report, as follows:

Mr. Ethelbert Stewart, chief statistician of the Bureau of Labor Statistics, was detailed October 27, 1913, to act as commissioner of conciliation. Local employers' organizations at first obstructed his conciliatory efforts, taking the untenable position that there was nothing to mediate because no labor dispute existed. As the employers involved in the dispute refused to consider proposals for conciliation, the impending strike broke out—to the injury of the

¹ Mr. Hogan was detailed from the Bureau of Immigration, the Department of Labor having at that time no appropriation for compensating appointees, and appointments without compensation being forbidden by law.

employers, of the wage earners directly concerned, and of the city. Great expense also was incurred by the State for military intervention. All this might have been prevented, with fairness to every interest, by the prompt arbitration by unbiased arbitrators which this department proposed and which the wage earners' organizations accepted but which the employers refused to consider. After the strike had begun it was settled by the arbitration method previously declined. The governor of Indiana having ordered troops to Indianapolis to preserve the peace, they were withdrawn upon the termination of the strike by means of an arbitration agreement. This agreement was secured largely through intercessions by the department both at Indianapolis and with eastern capitalists interested in the street car property.

Settlement of its terms depended, however, upon an arbitration agreement over the details of which considerable friction subsequently arose. The good offices of this department were therefore again requested by the employees April 7, 1914, and A. L. Faulkner, of the Immigration Service at Cleveland, being detailed as commissioner of conciliation, a final settlement was promptly effected.

Indianapolis teamsters' strike.—Hardly had the Indianapolis street-railway dispute been put in the way of arbitral adjustment when mediation by the Secretary of Labor was solicited in connection with a teamsters' strike in the same city, regarding which the following statement is from my first annual report, at page 16, as follows:

The request in this case came also from the wage earners, and the department's offer of mediation was also at first rejected by the employers; but the Solicitor for this department, who was appointed¹ commissioner of conciliation December 3, 1913, secured conferences with the employers involved, whereupon numerous individual settlements were effected. The settlement proposals to which the commissioner of conciliation had obtained the assent of the wage earners' organization were manifestly so fair that, although rejected by the employers' organization, the constituents of the latter could no longer be held in hostility to the wage earners. The strike therefore came speedily to an end.

Louisville & Nashville Railroad shops.—A request by workmen in the shops of this railroad at Corbin, Ky., for the wage scale conceded by the company to its shopmen elsewhere having had no response, a request for mediation was made by them January 7, 1914. The Secretary detailed A. L. Faulkner, an immigrant inspector at Cleveland, Ohio, as commissioner of conciliation, and after several conferences Commissioner Faulkner effected a satisfactory adjustment early in March.

Sawmill workers in Washington.—Upon a request, in February, 1914, from sawmill workers at Raymond, Wash., regarding a labor

¹ Should be "detailed." See footnote in case of Chicago & Alton Railroad shops, p. 28.

dispute affecting 150 wageworkers directly and 1,500 indirectly, the Secretary detailed W. T. Boyce, an immigrant inspector at San Francisco, as commissioner of conciliation. After repeated conferences with the parties Commissioner Boyce reported a satisfactory adjustment March 13, 1914.

Longshoremen's wage dispute in Texas.—A wages strike or lock-out of longshoremen at Port Arthur, Tex., directly affecting 290 wageworkers came to the attention of the department on the 14th of March, 1914, through a request of the longshoremen for mediation. Although the dispute originated in the understood purpose of the employers to reduce wages, their importation of colored laborers was displacing the wages question with a race question when, on March 16, the Secretary of Labor detailed Joseph S. Myers, an immigrant inspector at El Paso, Tex., as commissioner of conciliation. Through conferences with the parties Commissioner Myers brought about a satisfactory agreement March 28, the principal features of which were the admission of colored longshoremen as workmen at the port and an increase of longshoremen's wages.

Lake Erie & Western Railroad shops.—Because of a substitution by this railroad of piecework for daywork in its shops the machinists voted to strike. Upon their request for mediation, February 6, 1914, John A. Moffitt and James A. Smyth were appointed commissioners of conciliation, and under their advice the strike vote was reconsidered and the contemplated strike averted.

Michigan Central Railroad shops.—A similar dispute, affecting 550 employees of this company directly and 2,000 indirectly, was similarly adjusted by Messrs. Moffitt and Smyth, whom, upon the request of the employees for mediation, February 6, 1914, the Secretary appointed as commissioners of conciliation. This dispute was over questions of seniority and of a substitution of piecework for daywork. The machinists had voted to strike. Under the advice of Commissioners Moffitt and Smyth the strike was reconsidered pending negotiations, and after several conferences with both sides he secured an agreement on the basis of which cordial relations between the machinists and the company were restored.

Pennsylvania Railroad employees.—Application was made in April, 1914, for mediation in a pending strike of railway wage earners along the tracks of the Pennsylvania Railroad, who were organized in the "Brotherhood of Federated Railroad Employees." These wage earners complained of neglect by the company to recognize seniority in reducing its force, of its discriminations as to organizations of the men, and of its refusal to treat with committees of employees regarding grievances. In response to this application John A. Moffitt and James A. Smyth were appointed commissioners

of conciliation, and in cooperation with Commissioner Jackson, of the Pennsylvania Department of Labor and Industry, they brought the situation to a point at which the company expressed willingness to accede to their requests. The general manager assured the commissioners of conciliation that it was, and would continue to be, the policy of the company to discharge no employee for affiliation with religious, beneficial, political, or labor organizations, to observe the rule of seniority as far as compatible with individual efficiency, and to meet committees of employees with reference to grievances not satisfactorily redressed upon appeal to his subordinates. Representatives of the complaining employees declared their satisfaction with this result, but while negotiations on that basis were in progress they were checked by a strike over the matter which broke out contrary to the advice of this department.

Detroit machinists.—A strike of machinists employed by the Universal Bottle-washing Machine Co. at Detroit began May 23, 1914, in consequence of rejection of their demands for higher wages, shorter hours, and recognition of their union. They requested mediation June 15, 1914, and John A. Moffitt and James A. Smyth were appointed commissioners of conciliation. Several conferences intervened, but in four days a settlement was made in which the machinists' union was recognized, the hours of work were reduced from 52 to 50 per week, and wages were increased 35 per cent.

Coal & Coke Railway Co.—A labor dispute by the employees of this company at Gassaway, W. Va., which involved questions of wages, hours of labor, and general working conditions, was submitted to the department for mediation June 12, 1914, by the employees. On June 18 the Secretary detailed A. L. Faulkner as commissioner of conciliation, and at Commissioner Faulkner's suggestion the company joined him in a conference with their employees, at which a satisfactory agreement was made. It adjusted all the matters in dispute for one year and provided for arbitration of future disagreements.

Westinghouse Electric Co.—The circumstances of a strike in the plants of the Westinghouse Electric Co. were brought to the attention of the department by the Hon. John Price Jackson, commissioner of labor and industry of the State of Pennsylvania, June 17, 1914. Mr. Jackson requested the cooperation of this department in an effort at adjustment.

It is the purpose and policy of this department regarding labor disputes to cooperate with labor bureaus or departments of the States and with other State officials having authority with reference to the interests of wage earners. This policy was adopted in connection with one of the first labor disputes submitted to the depart-

ment for mediation, that of the Reading Railroad Car Workers, which is reported upon above. In that case, also, the intervention had been invited by the commissioner of labor and industry for Pennsylvania, Mr. Jackson, and a favorable result was secured through his cooperation.

Upon Commissioner Jackson's request for cooperation, the Secretary appointed Patrick Gilday and Charles W. Mills as commissioners of conciliation; and after several joint conferences of these commissioners, the State officials, and the officers of the Westinghouse Co., a settlement was effected and the men returned to work.

Machinists' strike at Trenton, N. J.—In a wages strike of machinists at Trenton, N. J., the Secretary having been requested by the employees to mediate, June 5, 1914, appointed Frank S. Lerch and William Blackman as commissioners of conciliation.

The situation was serious. Local conditions having made a settlement favorable to the machinists impossible, the dispute had developed to a point at which the local authorities were about to invoke the military power of the State. By the mediation of the department the necessity for this, whether real or otherwise, was obviated.

Although the demands with which the dispute began were not granted by the employers, a settlement was made that had the effect of saving to the wage earners involved all further loss from a hopeless contest by providing for their reinstatement as help was needed and without discrimination. On the other hand, it saved the State a military burden, protected the city from a possible paralysis of its industries and probable bitterness of civic feeling, and relieved the employers of a contest in which unconditional victory could have been of no benefit to them either as business men or citizens.

Pere Marquette Railroad clerks.—A dispute between receivers of the Pere Marquette Railroad and their clerical force threatened to supplement a strike of their former shopmen with one by their clerks. The latter requested mediation January 5, 1914, and on the 6th the Secretary detailed James Hogan, immigrant inspector at Chicago, as commissioner of conciliation.

The dispute had arisen over a working agreement of two years' standing. One of its terms provided that it should remain in force until September 1, 1913, and thereafter until superseded by another agreement after 30 days' notice. On the part of the clerks it was contended that by interpretation this provision required a meeting between the receivers and the clerks' committee before any change, alteration, or amendment could take effect, and therefore before the agreement could be terminated. The committee had frequently endeavored to obtain an audience with the management of the road to propose a renewal of the agreement on the basis of a higher rate of wages, but were unable to secure such meeting until October 24, 1913.

Negotiations proceeded thereafter until December 22, 1913, when the management terminated them by peremptory cancellation of the agreement. Subsequently, however, the date of cancellation was changed to January 22, 1914.

Those were the circumstances when the commissioner of conciliation intervened January 7, 1914. His proposal of mediation, though accepted by the clerks, was rejected by the receivers; but through his efforts the dispute was brought on the 12th to the attention of District Judge Tuttle, who had judicial supervision of the receivers and who, on the 19th of January, informally directed the attorney for the receivers to confer with the attorney for the Brotherhood of Railway Clerks and the commissioner of conciliation. At the resulting conference the attorney for the receivers agreed to advise withdrawal, pending further negotiations, of their cancellation of the clerks' agreement; and on the 27th the receivers notified Judge Tuttle that the agreement would be allowed to remain in effect pending adjustment by the court.

At this point the danger of a strike by the clerks, imminent until then, passed away. The matter was taken up in a joint conference of the clerks and the management which resulted, March 5, 1914, in a restoration of the clerks' agreement and the reinstatement of a member of the clerks' committee who had been discharged during the pendency of the dispute. But the request of the clerks for an increase of wages was refused by the receivers, and on this point the clerks made direct application to the court.

While final adjustment was not effected by the department in this case, its mediation resulted in securing reinstatement of the penalized representative of the clerks and a hearing in court and in averting a strike which must have been prejudicial to all the legitimate interests it would have affected.

Kanawha coal strike.—A coal strike of magnitude in the Kanawha Valley of West Virginia, which began in April, 1914, and had lasted two months when the department intervened, was expeditiously settled through the department in consequence of a request for investigation made by the employers concerned. The Kanawha Coal Operators' Association, after stating that 12,000 or 15,000 men had been "ordered on strike in the coal mines of Kanawha Valley" upon a "demand by organized labor that the coal operator shall take \$1 or \$2 a month from his employees and pay it over to the officers of the United Mine Workers at Indianapolis," added: "If some action is not taken promptly by the Federal Government to investigate and apply a remedy, the conditions that existed in West Virginia last year, and Colorado this year, will, we feel, soon be repeated." This reference to previous conditions in West Virginia was an allusion to the West

Virginia coal strike of 1912-13, in which there had been intensely bitter feeling with great disorder on both sides, and which a Senate committee had investigated with the result of bringing about an understanding of a contractual nature between the operators and the miners.

The understanding ended by its own limitation in April, 1914, when a contract between the miners' organization and the operators' organization was made for the next two years. Their contract, however, like the civil disorder which preceded it, related only to the region of Paint Creek and Cabin Creek, two tributaries of the Kanawha River. The miners and operators whose field was on the river below those tributaries had not been concerned in the strike. Yet the renewed contract for the disturbed field was regarded by the operators in the Kanawha field proper as putting them at a disadvantage in the coal market relatively to the Paint Creek and the Cabin Creek fields; and for this reason, as they asserted, they would not renew an expiring contract with their own employees unless their employees would recede from certain demands, one of them being a demand for periodical "check-off" payments by the operators to the miners' organization out of the wages of their organized employees as dues and assessments. The miners thereupon went on strike. Their strike was still under full headway after nearly two months' duration when the operators addressed to this department the communication quoted from above.

Denying the statement in that communication with reference to the "check-off" as being for the benefit of the United Mine Workers of Indianapolis, representatives of the United Mine Workers accepted mediation. "Only a small portion," they wrote, "of dues and assessments paid by the miners goes to Indianapolis. More has been sent into West Virginia by the United Mine Workers of America to protect those operators under a contract with us than would be paid in dues and assessments by the miners of West Virginia in the next 50 years. The miners only ask for a voluntary check-off of dues and assessments as the same is now being done for company stores, rents, burial fund, doctors, blacksmiths, and taxes, to all of which the miners offer no objection."

In these circumstances the Secretary of Labor appointed two commissioners of conciliation, namely, Charles W. Mills (coal operator), of Philadelphia, Pa., and Patrick Gilday (coal miner), of Clearfield, Pa., and detailed as third commissioner A. L. Faulkner, immigrant inspector at Cleveland, Ohio. The appointments and detail were made June 5, 1914. By June 19 recommendations adopted unanimously by the three commissioners of conciliation had been accepted both by the operators' organization and by the district executive board

of the miners' organization. Immediately afterwards the local organizations of the miners confirmed acceptance of the recommendations and the striking miners thereupon returned to work.

By those proceedings it was agreed on both sides (1) that the miners should return at once to work, as in fact they did; (2) that the same wages should be paid at the start as were being paid at the time of the strike; (3) that out of the wages of the miners the operators should periodically pay a "check-off" for dues and assessments not to exceed \$1.10 in any one month to the treasurer of the local union of the United Mine Workers of America in cases in which authority for such deduction and the release of the company from liability were given by the individual wageworker in writing; and (4) that a commission investigate and determine wages and grievances, the commission to consist of one person selected by the miners, one by the operators, and the third by the other two, or, in case of their disagreement, then by the Secretary of Labor. In consequence, however, of that adjustment a comprehensive tentative contract was subsequently made without intervention by the agreed-upon commission, and at a convention of miners held in Charleston, W. Va., July 15, 1914, this agreement, already accepted by the operators, was ratified by a vote of 2 to 1.

Tugboat towing interests on the Great Lakes.—Another notable instance of the pacific influence of the Department of Labor in averting disastrous industrial conflicts by securing settlements satisfactory to both sides and beneficial to the public is afforded by its successful intervention in a controversy between the licensed tug men of the Great Lakes and the Great Lakes Towing Co.

This controversy, which affected 36 employees immediately and 8,608 mediately, seems to have been an indirect outcome of a decision by the United States District Court for the Southern District of New York in actions instituted to recover for violations of a Federal statute which penalizes the navigation of vessels of a class including the tugs of the Great Lakes unless they are manned by crews licensed by the Steamboat-Inspection Service in the Department of Commerce. Licenses applicable to tugs and similar harbor craft require double crews except for boats navigated only 13 hours out of the 24, and it was upon this point that the court decision in question turned. Although the tugs involved in the case had been away from their piers more than 13 hours daily and with but a single crew on each, it was argued that time spent awaiting orders or taking on supplies should be deducted, and that if this were done the hours of actual navigation would be reduced to less than 13. But the court held that as the purpose of the statute is to insure safety, the statutory words "navigation" and "navigated" refer to all the time during

which the vessel is engaged in business. This interpretation was influenced largely by the fact that with a single crew men might be worked to a point of weariness that would endanger the vessel, whereas with a double crew each would be at work not more than 12 hours a day. A penalty of \$500 on the owners of each boat for every day's business with a single crew in excess of 13 hours was accordingly incurred.

Following that decision the president of the International Longshoremen's Association, acting in behalf of an affiliated body, namely, the Licensed Tug Men's Protective Association, informed this department that a serious situation in the tugboat service on the Great Lakes had arisen and requested mediation. Before intervening the Department of Labor conferred with the Department of Commerce, with a view to ascertaining the circumstances in so far as they concerned the functions of the Steamboat-Inspection Service, and to avoid such possible misunderstandings as might arise between subordinates of these two departments in consequence of the appointment by the Secretary of Labor of a commissioner of conciliation with reference to a matter concerning both departments, though in different spheres—the one with reference to safety of navigation, the other with reference to the welfare of wage earners. There being no objection by the Department of Commerce, the Secretary of Labor appointed Rowland B. Mahany, Esq., of Buffalo, N. Y., as commissioner of conciliation, instructing him to cooperate with the Steamboat-Inspection Service to the end that there might be harmony between the representatives of the two departments. He entered upon the performance of his duties immediately after his appointment, which was made April 28, 1914.

Confirmed in its authority by the decision outlined above, the Steamboat-Inspection Service in the Department of Commerce had already begun a vigorous enforcement of its safety regulations. It exacted a double crew on all steamers, but upon its certificates to those engaged in harbor work it made a modifying indorsement allowing single crews for a day's business of not more than 12 hours out of the 24. By following the court decision interpreting this requirement the Steamboat-Inspection Service made conditions to which the tug men, both owners and workmen, claimed to have been unaccustomed, and which nullified a contract between the associated owners and the organized men that had been signed February 20, 1914, for a period of two years.

It became necessary, therefore, to modify this agreement. But the tug men were unwilling to consent to double crews and the owners were averse to restricting their boats to a 12-hour service. On the one hand, the owners considered that they had the alternative of risking loss of business during half of each day or insisting upon

double crews; on the other, the men considered that they had the alternative of insisting upon single crews or risking safety and health by consenting to double ones. The objection of the men to double crews was, principally, that it involved not only the possibility but the probability of one crew being compelled to sleep aboard the tug while the other crew was operating it. This plan would subject the men to very serious peril, as appears from the large percentage of accidents whereby a great number of them have lost their lives through the capsizing of tugs. Other important objections were the insanitary and uncleanly conditions caused by cramped tugboat construction, involving not only such inconveniences as the absence of all toilet facilities but a practical necessity for the beds or bunks being occupied continuously by one crew after the other. Both owners and men were subject to severe penalties for more than 12 hours' work a day with single crews, and in the case of the men it involved the loss of their licenses. There was therefore between the two interests a deadlock which the Steamboat-Inspection Service could not relieve; and when Commissioner Mahany intervened in behalf of this department the situation had developed into a lockout of the tugboat men by the tugboat owners. The circumstances seemed at that time to justify the anticipations of the president of the International Longshoremens' Association when bringing the subject to the attention of this department on the 14th of April, 1914, that the difficulty might "result in the tying up of commerce in nearly every port on the Great Lakes."

At first the principal representative of the tugboat owners was disinclined to accept Commissioner Mahany's proffer of the good offices of the Department of Labor in the interest of commercial and industrial peace. He refused to discuss the matter and declined any interview on the subject, saying: "Our property is tied up, the men discharged, and there is nothing to discuss, nothing to consider, nothing to arbitrate." Better counsel prevailed, however, after other representatives of the owners had been consulted by the commissioner of conciliation, and 15 days after his appointment the controversy was amicably settled.

The contract of settlement, bearing date May 13, 1914, was signed by the Licensed Tug Men's Protective Association and the Tug Firemen's and Linemen's Protective Association, both affiliated with the International Longshoremens' Association, and by the Great Lakes Towing Co. It provided that single crews shall remain on duty under such arrangements as to make their tugs available for service the full length of time permitted by the tug certificate, and that the tug men's associations shall furnish, as requested by the owners, the men necessary to operate tugboats 24 hours a day continuously. The effect of this agreement is to conform the tugboat business to the

requirements of the law and the regulations of the Steamboat-Inspection Service, leaving it to the tug men to make the necessary adjustments among themselves for their own comfort, safety, and health.

In effecting this settlement to the satisfaction of all parties and the conservation of public interests, the Department of Labor was especially assisted by the cordial and effective cooperation with its commissioner of conciliation of Mr. T. V. O'Connor, president of the International Longshoremen's Association, and of Mr. W. W. Wardwell, secretary of the Great Lakes Towing Co.

MEDIATION OFFERS REJECTED.

As stated in my first annual report, and it remains true after the experience of nearly another year, whenever mediation has been solicited by both sides, or by either side and acquiesced in by the other, a settlement has been secured in which the industrial interests of both sides have been fostered, industrial order has been conserved, and a spirit of industrial cooperation between employers and wage-workers has been encouraged. But in a small percentage of cases the department's offers of mediation have been rejected.

Pere Marquette Railroad shops.—The strike in the shops of the Pere Marquette Railroad, which began near the close of the fiscal year 1913, is described in the first annual report as follows, down to the close of that calendar year:

The Pere Marquette Railroad is in the hands of receivers appointed by a Federal court. Between the receivers and certain wage earners formerly employed by them employment contracts with shop organizations were in force down to about May, 1913. In connection with proposed renewals of those contracts, which were already past the date of expiration by their terms, a labor dispute developed while the parties were in negotiation. In consequence of this dispute a strike began in one craft of one of the shops. The negotiations were thereupon broken off by the receivers. They professed willingness, however, to resume negotiations upon restoration of the status quo as it existed before the strike. The representatives of the wage earners concerned professed a corresponding willingness to restore the status quo and asserted that they were on the point of securing its restoration when the receivers imported a large body of men from "strike-breaking" labor agencies in Chicago. Upon the introduction of those men in the places of the striking craftsmen in the one shop the organized crafts in all the shops struck.

The striking wage earners still insist that the new men were "strike breakers" temporarily employed. The receivers deny that many were of that class and assert that all now there are wage earners in regular employment. It is, however, clear that a labor dispute of concern to the railroad, to a large number of trained craftsmen, and to the public has for seven months¹ continued in connection with the shops of the Pere Marquette Railroad system.

¹ Since May, 1913.

When representatives of the striking wage earners solicited mediation by this department and the friendly offices of the Secretary of Labor were consequently offered to the receivers his offers were rejected on the ground that no labor dispute existed in the shops. By this the receivers meant, as they explained, that their shops were fully equipped with competent craftsmen, between whom and themselves there was no controversy. They refused to recognize the strikers as having any longer any labor interest in their shop affairs. The fact ought to be stated perhaps that the striking craftsmen were citizens of the towns in which the shops are located, many of them owning their homes, and that the craftsmen who displaced them were strangers in those places. It should be stated also that at the time when the receivers informed the department that there was no strike in their shops the imported men in the Grand Rapids (Mich.) shops were housed in box cars and tents on the grounds of the company outside of Grand Rapids and "pickets" of the strikers were stationed at the town boundary.

When the receivers had finally refused the mediatorial offers of the department, declining to enter into any kind of conciliatory conference, directly or indirectly, with their former wage earners, nothing remained for the department to do in the matter except to confer with the Federal court to which the receivers are responsible, and this it has done. Its acknowledgments are due to the district judge for his courtesy in the matter, but the dispute remains unadjusted.

Renewed efforts by the department later in the fiscal year to find a basis of agreement satisfactory to both parties were also unsuccessful, the receivers continuing in their refusal to mediate.

Calumet copper miners.—The circumstances of the copper miners' strike in northern Michigan, mentioned in the first annual report as involving requests for mediation by the miners concerned and rejection by the employers of the offers of this department to mediate, are outlined in that report, as follows:

This strike began July 22, 1913. At that time the total number of employees was, in round numbers, 15,500, of whom 12,000 worked underground. Among those working above ground were about 1,100 in stamp mills. The stamp-mill workers have not joined in the strike, but they were compelled to quit work when the supply of rock for stamping and smelting gave out in consequence of the strike by the others. Of the total number employed (15,500), about 9,000 belonged to the Western Federation of Miners, and about 7,000 are still on strike.

Upon being requested by the wage earners' side of this dispute to mediate with reference to it under section 8 of the organic act of the Department of Labor, the Secretary of Labor detailed John A. Moffitt from the Bureau of Immigration, appointing him to act as commissioner of conciliation. John B. Densmore, Solicitor of the department, was subsequently appointed¹ commissioner of conciliation to supplement the work of Mr. Moffitt. Both commissioners proffered their friendly offices to the employers and made every reasonable effort at conciliation. It has been impossible, however, to bring the

¹ Should be "detailed."

parties to an amicable understanding, principally because the employers have refused to consider any terms which do not include an agreement by the miners to renounce their labor organizations. The department could not in fairness advise the miners to accept that condition against their will.

Three official reports have been made—one by Walter B. Palmer, of the Bureau of Labor Statistics, and one by each of the two commissioners of conciliation named above. Publication of Mr. Palmer's report, as well as Commissioner Moffitt's, was postponed lest premature publication embarrass further efforts at conciliation. But upon receipt of Commissioner Densmore's report, all three were made public. The unyielding disposition of the parties to this dispute seemed at that time to have made friendly conciliation impossible. No reason remained, therefore, for further postponement of publication.

If the managers of the property involved in this strike had dealt with the dispute at its inception, as its principal owners (Messrs. Shaw and Agassiz) might have done had they been on the ground and personally in charge, there is reason to believe that no strike would have occurred. But the local superintendent, doubtless an excellent property manager, appears by the reports to have been a poor manager of men. When the employees solicited a conference with him, in order to present grievances, their request was entirely ignored. It appears to have been this treatment that precipitated the strike and kindred treatment that prevented subsequent negotiations for terminating it fairly. No rights of the company could have been injured, nor any prejudice to its business incurred, by a courteous reception of complaints from the employees, followed by removing grievances if real or explaining them away if mistaken. Whatever may have been the responsibility of the workmen for the strike and its incidents, the local management can not be wholly acquitted; and upon the elementary principle of agency, as sound in morals as in law, ultimate responsibility must rest upon the owners.

Coal strike in Colorado.—The coal strike in Colorado, which has necessitated the use of Federal troops, is another conspicuous instance of industrial warfare in which, however heavily the responsibility may rest upon the strikers, it must attach also to the local management of the property involved and therefore to the responsible owners. In its early stages this strike could, as stated in the first annual report, "have been settled upon fair terms had the proposals of the Department of Labor for arbitration by an unbiased board chosen by mutual agreement been promptly accepted." That report proceeds:

The miners were willing, but the employers refused. No further concession was offered by the employers by way of conciliation than that thereafter they would obey the laws of the State of Colorado relative to mining and mine labor. This offer was declined by the miners as a conciliation offer on the ground that an offer to obey

laws intended for the protection of wage earners is not a concession in a labor dispute. When the strike began there were approximately 13,000 coal miners in Colorado. Of these, about 2,000 were working in the northern coal fields and about 3,000 are believed to have left the State. Between 90 and 95 per cent of the remaining 8,000 went out on strike, and of those that struck about 5 per cent have returned to work. The remainder—nearly 7,000—are still on strike. "Strike breakers" have been imported by the employers, some of them from outside the State. It is alleged by the miners that the imported men are hired under pretenses that there is no strike. This allegation, however, is denied by the employers. Many persons have been killed—probably 30 or 40 on each side—and guerilla warfare continues. Each side places the responsibility for this on the other. Among citizens of Colorado other than those engaged in mining, it is asserted that a feudal system holds sway over the coal regions, sometimes benevolent and sometimes otherwise; that the coal companies are absolute in their respective coal camps, not only as to industrial relations but also as to social and political affairs; that in strike periods miners are frequently interfered with in their access to post offices, which are usually located on company property; and that armed guards have been employed by the companies to intimidate and coerce workers. The companies deny all this, their representatives making the countercharge that the miners have bought large supplies of firearms. Some of the miners admit purchasing firearms, but assert that they have done so solely for the purpose of defending their persons and their homes against the armed guards of the companies.

After the period embraced in the foregoing quotation these conditions were investigated by the Committee on Mines and Mining of the House of Representatives, pursuant to House resolution 387. The evidence taken before a subcommittee from February 9, 1914, to April 23, 1914, is an important contribution to the history and to a fair understanding of the merits of this deplorable controversy.

In April the situation was such that the President, in response to a request of the governor of Colorado and pursuant to section 4 of Article IV of the Constitution, dispatched Federal troops to the disturbed places. He at the same time ordered all persons engaged in or threatening domestic violence, or whose acts were likely to give rise to disorder, to disperse peaceably, and that no person or persons, natural or artificial, be permitted to do that which might give rise to disorder of the character theretofore occasioned. He furthermore informed the governor of Colorado that "he would not, by the use of troops or by any attempt at jurisdiction, inject the power of the Federal Government into the controversy" which had produced the situation, but would confine the use of Federal troops "to maintaining a status of good order until the State can reassert its authority and resume the enforcement thereof." Peaceable conditions at once resulted.

Thereupon efforts at conciliation were again made by this department, the Secretary appointing Hywel Davies and W. R. Fairley as commissioners of conciliation. An operator in the coal-mining industry, Mr. Davies has had much experience as such and as a large employer of miners; Mr. Fairley has worked many years as a miner, and is a member of the United Mine Workers of America, which has an approximate membership of 430,000 coal miners in the United States out of about 750,000. Both men have earned the confidence of operators and miners alike for their competency and fairness in adjusting labor disputes.

After a thorough investigation of the coal-mining conditions in Colorado the two commissioners agreed upon the following as a fair basis for adjustment:

There should be established a three-year truce, subject to—

1. The enforcement of mining and labor laws of the State.
2. That all striking miners who have not been found guilty of violation of the law shall be given employment by the employer they formerly worked for; and where the place of the employee has been filled, he shall be given employment as a miner at the same or other mines of the company.

3. Intimidation of union or nonunion men strictly prohibited.

4. Current scale of wages, rules, and regulations for each mine to be printed and posted.

5. Each mine to have a grievance committee, to be selected by majority ballot at a meeting called for the purpose, in which all employees (except officials of the company) have the right to participate. Members of said committee must be employed at least six months at the individual mine before being eligible. Married men to be in the majority on each committee. Grievances to be first taken up individually with the proper officer of the company. Failing adjustment, they can refer to their local grievance committee for further consideration with the mine officials. Still failing adjustment, the matter shall be submitted to a commission composed of three men to be appointed by the President of the United States, and which shall be representative of each side, with the third member to act as umpire whenever necessary. This commission shall, during the three years of truce, serve as adjusters or referees in all disputes (whether individual or collective) affecting wages, working and social conditions. Said commission shall devote primarily all the necessary time to the consideration and adjustment of such disputes.

6. It is understood as a condition of the creation of said commission that during the life of the truce—

- (a) The claim for contractual relations is to be waived, but this shall not prevent the voluntary agreement between any employer and his employees during the life of this truce.

- (b) No mine guards to be employed, but this does not preclude the employment of necessary watchmen.

- (c) In the establishment of the truce the presence of the Federal or State troops should become unnecessary.

- (d) There shall be no picketing, parading, colonizing, or mass campaigning by representatives of any labor organization of miners that are parties to this truce which will interfere with the working operations of any mine during the said period of three years.

(e) During said truce the decisions of the commission in cases submitted shall be final and binding on employers and employees.

(f) There shall be no suspension of work pending the investigation and reaching a decision on any dispute.

(g) The suspension of a mine over six consecutive days by the company may be authorized for cause satisfactory to the commission, but not pending any dispute.

(h) Willful violations of any of these conditions will be subject to such penalties as may be imposed by the commission.

On account of the mutual benefits derived from the truce, the employers and employees should each pay one-half of the expenses of the commission.

The commissioners of conciliation having agreed upon the foregoing proposals, described by them as "draft of a tentative basis for the adjustment of the coal strike," the President addressed the following letter to the officials respectively of the organizations concerned, namely: The president of the Colorado Coal, Fuel & Iron Co.; the chairman of the Victor-American Fuel Co.; the president of the Rocky Mountain Fuel Co.; and the officers of the United Mine Workers of America:

THE WHITE HOUSE,

September 5, 1914.

MY DEAR SIR: I feel justified in addressing you with regard to the present strike situation in Colorado, because it has lasted so long, has gone through so many serious stages, and is fraught with so many possibilities that it has become of national importance.

As you know, Federal troops have been in the State for the purpose of maintaining order now for a long time. I have been hoping every day during that time that some light would come out of the perplexities of the situation, some indication that the mine operators and the miners who are now on strike were willing to consider proposals of accommodation and settlement, but no such indication has reached me, and I am now obliged to determine whether I am justified in using the Army of the United States indefinitely for police purposes.

Many things may come out of this situation if it is not handled with public spirit and with a sincere desire to safeguard the public as well as all others concerned, perhaps the most serious of them all the feeling which is being generated and the impression of the public that no one is willing to act, no one willing to yield anything, no one willing even to consider terms of accommodation.

As you know, two representatives of the Government of the United States have been actively engaged in investigating the whole situation and in trying to reach a dispassionate conclusion as to what it is possible to do in justice to both sides not only, but also in the interest of the public. The result of their investigations and of their very thoughtful consideration in the matter has been the drafting of the inclosed "tentative basis for the adjustment" of the strike. I recommend it to you for your most serious consideration. I hope that you will consider it as if you were acting for the whole country, and I beg that you will regard it as urged upon your acceptance by myself with very deep earnestness. This is a time, I am sure you will feel, when everything should be done that it is possible for men to do to see that all untoward and threatening circumstances of every sort are taken out of the life of the people of the United States.

Sincerely, yours,

(Signed)

WOODROW WILSON.

A miners' convention at Trinidad, Colo., held under the auspices of the United Mine Workers of America, considered the President's foregoing letter in a two days' session, and on September 16, 1914, approved its suggestions by a delegate vote of 83 to 8; but no adjustment has yet been made.

Indiana cement workers.—A comparatively minor labor dispute, in which mediation was rejected, came to the attention of the department through a letter from John Fitzpatrick, as president of the Chicago Federation of Labor, April 13, 1914, accompanied with a request for mediation. The wage earners concerned, cement workers at Mitchell, Ind., were engaged in a labor dispute with the Lehigh Portland Cement Co., of that place, over questions of recognizing the cement mill workers' union and of readjusting the wage scale. Charles Weidler, Esq., of South Bend, Ind., was appointed commissioner of conciliation. After persistent negotiations no mutually satisfactory basis for settlement was found. Though Commissioner Weidler succeeded in procuring from the cement workers a fair offer of arbitration, the company refused to consider it favorably.

MISCELLANEOUS.

Philadelphia garment makers.—A garment makers' strike at Philadelphia occurring in the present fiscal year was accounted for as follows in my first annual report:

The department acted in cooperation with the Pennsylvania Department of Labor and Industry, at the latter's request, with a view to bringing the disputants to a friendly adjustment of their dispute by arbitration or otherwise, if possible. While progress was making toward an adjustment by mutual concessions, the wage earners involved, finding themselves unable to hold out longer, surrendered their claims.

Erie iron molders.—An offer to mediate in this strike was reported upon as follows last year:

At the request of organizations representing the wage earners' side of that dispute, the Department of Labor sounded the organizations representing the employers' side, doing so with reference to the disposition of the latter toward considering possibilities of amicable adjustment. Although the accredited representative of this department was courteously received, he was discouraged from making a formal offer of mediation.

Factory strike in Boston.—A wages strike at the Becker and the Sturtevant factories in Boston was reported last year as follows:

At the instance of organizations representing the wage earners involved, this department offered mediation. But the employers, though courteous, were unyielding in their refusal to consider any other terms than unconditional resumption of work by the striking wage earners at their former wages.

Marconi wireless.—A dispute regarding which the department is unable to report further was reported upon as follows in last year's report:

Early in April, 1913, the department was advised of an impending strike at San Francisco, Cal., of wireless telegraph employees of the Marconi Wireless Telegraph Co. of America. The reason given was insufficient wages. W. J. McConnell, of the Immigration Bureau, and G. W. W. Hanger, of the Bureau of Labor Statistics, were detailed as commissioners of conciliation, the former for service at San Francisco and the latter in New York. The company having refused to adjust the dispute through conciliation and also to enter into arbitration, the commissioners of conciliation were unable to effect a settlement, and the impending strike began on the 22d of April, 1913.

TABULATION.

The table on pages 44 and 45 summarizes the mediation and conciliation work of the department from its creation to the close of the fiscal year.

Mediation and conciliation work completed from Mar. 4, 1913, to the close of the fiscal year, June 30, 1914.

Subject.	Request for mediation.		Offer of mediation by the department.	
	Date.	Requested by—	Date of offer.	Response.
New York, New Haven & Hartford R. R.	May 24, 1913	Railroad company and railroad clerks.	May 24, 1913	Accepted by employees.
Erie Forge Co.	June 17, 1913	Company.	June 17, 1913	Accepted by both sides.
Reading R. R. car workers.	July 1, 1913	Department of Labor of Pennsylvania.	July 1, 1913	Accepted by employer.
Reading Hardware Co.	July 17, 1913	Employees.	July 22, 1913	Accepted by employees.
Baltimore & Ohio R. R. machinists.	July 21, 1913	Company and employees.	Dec. 4, 1913	Dec. 4, 1913
Western Maryland R. R. shopmen.	Dec. 3, 1913	Employees.	Oct. 28, 1913	Oct. 28, 1913
Chicago & Alton R. R. shopmen.	Oct. 28, 1913	do.	Oct. 27, 1913	Oct. —, 1913
Indianapolis street car workers.	Oct. —, 1913	do.		
This dispute reopened.	Apr. 17, 1914	Employees.	Dec. 3, 1913	Dec. 3, 1913
Indianapolis teamsters.	Dec. 1, 1913	do.	Aug. 1, 1913	Aug. 2, 1913
Pere Marquette shopmen.	July 26, 1913	do.	Sept. 5, 1913	Sept. 5, 1913
Colorado coal strike.	Sept. 1, 1913	do.	Aug. 30, 1913	Aug. 30, 1913
Calumet copper strike.	July 31, 1913	do.	Feb. 9, 1914	
Louisville & Nashville R. R. shopmen.	Jan. 7, 1914	do.	Mar. 4, 1914	Mar. 4, 1914
Sawmill workers, Raymond, Wash.	Feb. 21, 1914	do.	Dec. 10, 1913	
Garment workers, Philadelphia, Pa.	Dec. 8, 1913	Department of Labor of Pennsylvania.	Mar. 16, 1914	Mar. 16, 1914
Longshoremen, Port Arthur, Tex.	Mar. 14, 1914	Employees.	Feb. 6, 1914	Feb. 6, 1914
Big Four R. R. shopmen.	Feb. 6, 1914	do.	do.	do.
Lake Erie & Western.	Feb. 1, 1914	do.	do.	do.
Michigan Central R. R.	do.	do.	do.	do.
Universal Bottle-Washing Machine Co., of Detroit, Mich.	June 15, 1914	do.	June 15, 1914	June 19, 1914
Kanawha coal miners of West Virginia.	June 2, 1914	Employees.	June 3, 1914	June 3, 1914
Coal & Coke R. R. Co. shopmen.	June 12, 1914	Employees.	June 12, 1914	June 2, 1914
Licensed tug men on Great Lakes.	June 20, 1914	do.	June 23, 1914	June 23, 1914
Westinghouse Electric Co.	June 17, 1914	Department of Labor of Pennsylvania.	June 18, 1914	June 18, 1914
Machinists of Trenton, N. J.	June 5, 1914	Employees.	June 5, 1914	June 5, 1914
Cement workers, Mitchell, Ind.	Apr. 13, 1914	do.	Apr. 27, 1914	Apr. 28, 1914
Tidewater boatmen, New York City.	June 26, 1914	do.	June 23, 1914	June 23, 1914
Keystone Steel & Wire Co.	July 15, 1914	do.	July 15, 1914	July 15, 1914
Postal telegraphers.	May 15, 1914	do.	May 16, 1914	May 16, 1914
Pere Marquette R. R. clerks.	Jan. 5, 1914	do.	Jan. 6, 1914	Jan. 6, 1914
Illinois Central R. R. shopmen.	June 15, 1914	do.	July 15, 1914	Jan. 6, 1914
Pennsylvania R. R. Co.	Apr. 6, 1914	do.	Apr. 19, 1914	Apr. 19, 1914

Subject.	Commissioners of conciliation.				Result.	Workmen affected.	
	Name.	Appointed.	Report received.			Directly	Indirectly.
New York, New Haven & Hartford R. R.	G. W. W. Hanger.	May 24, 1913	June 2, 1913		Amicable adjustment.		
Erle Forge Co.	Assistant Secretary.	June 18, 1913	June 23, 1913		do.	900	1,200
Reading R. R. car workers.	G. W. W. Hanger.		July 12, 1913		do.	2,000	16,000
Reading Hardware Co.	do.		July 17, 1913		do.	250	
Baltimore & Ohio R. R. machinists.	J. A. Moffitt.	July 22, 1913	Aug. 5, 1913		do.	485	
Western Maryland R. R. shopmen.	Assistant secretary.		Dec. 4, 1913		do.	900	
Chicago & Alton R. R. shopmen.	James Hogan.	Oct. 28, 1913	Dec. 27, 1913		do.		
Indianapolis street car workers.	J. A. Moffitt and Ethelbert Stewart.	Oct. 27, 1913	Nov. 7, 1913		do.		
This dispute reopened.	May 1, 1914	May 14, 1914			do.		
Indianapolis teamsters.	J. B. Densmore.	Dec. 3, 1913	Dec. 9, 1913		do.	3,200	
Pere Marquette shopmen.	Assistant Secretary.	Aug. 8, 1913	Aug. 11, 1913		Unable to adjust.	1,500	
Colorado coal strike.	Ethelbert Stewart, W. R. Fairley and Hywel Davies.	{ Sept. 5, 1914			Pending	{ 8,000	
Calumet copper strike.	J. A. Moffitt.	{ Sept. 5, 1913			Unable to adjust.	{ to 10,000	
Louisville & Nashville R. R. shopmen.	J. R. Densmore.	Sept. 26, 1913	Dec. 1, 1913		do.		
Sawmill workers, Raymond, Wash.	A. L. Faulkner.	Feb. 9, 1914	Jan. 10, 1914		Amicable adjustment.	180	
Garment workers, Philadelphia.	W. T. Boyce.	Mar. 4, 1914	Mar. 6, 1914		do.	150	1,500
Longshoremen, Port Arthur, Tex.	Ethelbert Stewart.	Dec. 10, 1913	Mar. 13, 1914		do.	3,400	
Big Four R. R. shopmen.	Joseph S. Myers.	Mar. 16, 1914	Mar. 28, 1914		Amicable adjustment.	900	
Lake Erie & Western.	J. A. Moffitt.	Feb. 6, 1914			Pending.	700	2,000
Michigan Central R. R.	J. A. Moffitt and J. A. Smyth.	do.			do.	400	1,500
Universal Bottle-Washing Machine Co., of Detroit, Mich.	do.	do.	June 19, 1914		Amicable adjustment.	550	2,000
Kanawha coal miners of West Virginia.	C. W. Mills, A. L. Faulkner, and Patrick Gilday.	June 5, 1914	June 18, 1914		do.	12,000	
Coal & Coke R. R. Co. shopmen.	A. L. Faulkner.	June 12, 1914	July 10, 1914		do.	to 15,000	
Licensed tugmen on Great Lakes.	R. B. Mahany.	June 23, 1914	May 13, 1914		do.	181	8,608
Westinghouse Electric Co.	C. W. Mills and P. Gilday.	June 18, 1914	July 12, 1914		do.	10,000	
Machinists of Trenton, N. J.	F. Lerch and Wm. Blackman.	June 5, 1914	Sept. 1, 1914		Amicable adjustment.	435	6,813
Cement workers, Michoud, Ind.	Charles Welder.	Apr. 28, 1914	July 23, 1914		Unable to adjust.		
Tidewater boatmen, New York City.	R. B. Mahany.	June 28, 1914	July 25, 1914		Pending.	50	100
Keystone Steel & Wire Co.	J. A. Moffitt.	July 15, 1914	Aug. 24, 1914		Amicable adjustment.	8	180 to 300
Postal telegraphers.	R. B. Mahany.	do.	July 26, 1914		Pending.		
Pere Marquette R. R. clerks.	James Hogan.	Jan. 6, 1914	Mar. 12, 1914		Unsettled.		500
Illinois Central R. R. shopmen.	J. A. Moffitt and J. A. Smyth.	July 15, 1914	July 23, 1914		Amicable adjustment.	8,000	
Pennsylvania R. R. Co.	do.	Apr. 18, 1914	July 1, 1914		Employees' demands granted.	20,000	80,000

GENERAL CONSIDERATIONS.

Policy of the department in labor disputes.—Regarding acceptances of offers of this department to mediate in labor disputes, I took occasion in my first report to observe:

Both sides to those amicably settled labor disputes may be congratulated upon their enlightened self-interest. They promoted their own prosperity the better by preferring friendly mediation to embittered strife. And both deserve praise for enlightened patriotism. Instead of challenging the miseries and perils of an industrial warfare which is waged by fighting methods peculiar to the different economic advantages possessed by each combatant, and in which unconditional surrender is the irreducible demand of each upon the other and destruction of the just interests of one or both the probable finality, instead of clinging to this unpatriotic policy the disputants in those cases settled their disputes pursuant to a policy that harmonizes with the best ideals of American citizenship. By resisting the temptations that usually harass both sides in labor disputes, they have promoted the interests of industrial peace.

That this observation—applicable to most of the labor disputes in which one party or the other has requested mediation—does not apply to all, may possibly be due to some misunderstanding of the functions and policy of the Department of Labor.

It should be understood, therefore, that mediation does not mean arbitration, compulsory or otherwise. Nor is it in any other sense a judicial function. The function is one of negotiation. Neither the Secretary nor commissioners of conciliation whom he appoints are arbitrators. Though they may propose arbitration when circumstances seem to call for it, they do not themselves act as arbitrators, and it is contrary to the policy of the Department of Labor for them to do so.

What the commissioners of conciliation seek to do is to bring employer and employee together, so that they may work out their differences between themselves peaceably and amicably, as business men with legitimate differences to adjust. When commissioners fail in that way to get employee and employer together, mediation is resorted to. The commissioners negotiate between representatives of the employee and representatives of the employer in an effort to find some mutually satisfactory basis of agreement. Failing also in that, the commissioners endeavor to get the conflicting parties to agree to a basis of arbitration, the award to decide nothing but the points actually in dispute. Any of those three courses is preferable to a strike. When the department is unable, whether through commissioners of conciliation or otherwise, to get the parties to meet and work out their own problems, or to agree upon an adjustment by way of mediatorial negotiation, or to adopt arbitration by arbitrators of their own choosing, then there is nothing further

the department can do than to give to the public the information necessary to enable it to pass a fair judgment upon the merits of the dispute.

It will be seen, therefore, that the qualifications of commissioners of conciliation are not at all judicial, and that criticisms of their having or having had partisan affiliations are based upon a misapprehension of the duty the statute has imposed upon them and upon this department. It is not a reasonable objection to a commissioner of conciliation that he belongs to a workers' organization, nor that he belongs to an employers' organization. His important qualifications are not ignorance of or indifference to the interests of either party or both, but tact, fairness, and good feeling in negotiations in addition to competency with reference to technical aspects of the matters in dispute. Those qualifications among persons having no affiliations with either side are too rare for the practical purposes of mediation and conciliation.

It is, then, the policy of the Department of Labor, and has been its custom, to appoint in important cases two or more commissioners of conciliation of the kind just described, so that the Secretary may be intelligently advised of the merits of the dispute from all angles on both sides.

This was done in the case of the Colorado coal strike, one of the commissioners in that case being, as already stated, a miner whose labor affiliations pointed to possible sympathy with the strikers, the other being a mine operator whose business affiliations pointed possibly to sympathy with the mine operators. But both were fair-minded as well as technically competent men. Their joint recommendation, approved by the department and the President and accepted by the strikers, is confidently submitted as evidence of the good faith of the department's commissioners of conciliation and of the wisdom of its general policy in mediation and conciliation work.

Under the statute the Department of Labor has authority to do this work upon its own initiative. Thus far, however, it has pursued the policy of interfering only where there has been a request from one or both of the parties to a controversy.

Information of labor disputes.—Although the department seldom offers mediation in labor disputes unless solicited to do so, and although this is regarded as the wiser policy at present, yet the statute empowers the Secretary to act "whenever, in his judgment, the interests of industrial peace may require it to be done"; and conditions are conceivable in which it would be advisable for the department to offer its good offices though neither party requested or desired it. In the case, for instance, of a strike of such bitterness as to inspire both sides with a determination to fight to the bitter end, and of such magnitude as to prejudice other industrial interests or to disturb the public

at large, it would doubtless be the duty of the Department of Labor to intervene. To enable the Secretary to exercise his judgment with reference to his duty in that aspect of it, some method of promptly securing information of actual and impending labor disputes likely to disturb industrial peace should be devised. This kind of information may be obtained to some extent from newspapers and to a further extent through cooperation with the labor bureaus or departments of the respective States; and, as far as at present practicable, such information is being obtained by the department through those and other convenient channels. But that phase of the department's functions under section 8 of its organic act has not yet been as systematically organized as it should be, nor as it is hoped to organize it during the fiscal year 1915. Meanwhile, information volunteered from responsible sources, especially by labor officials of State and municipal governments, is and will continue to be appreciated.

Results.—That the department has been reasonably successful in its mediation and conciliation work may be seen by reference to the foregoing table of cases disposed of since its organization. In some the good offices of the department have been solicited by both parties; in most they have been solicited by one party and accepted by the other; in only 5 (the employer in each instance) have they been rejected by either party when offered by the department. Satisfactory adjustments have been made in 23 cases out of a total of 32.

By these adjustments of labor disputes made with appropriations amounting to only \$25,000 for the first 16 months and only \$50,000 for the year which does not end until June 30, 1915, the Department of Labor has doubtless saved industrial loss to the extent of millions of dollars.

DISTRIBUTION OF WAGE EARNERS.

The welfare of the wage earners of the United States can not be served by mediation of labor disputes alone. Affirmative measures for modifying if not wholly obviating the industrial maladjustments that generate these disputes must be undertaken as well. For this purpose legislation is necessary. Pending such legislation, however, the department is utilizing its present powers as fully as circumstances permit by availing itself of the services of the Division of Information in the Bureau of Immigration. This division of that bureau has been specifically empowered by Congress to promote a beneficial distribution of immigrants. By its subsequent subordination to the Department of Labor, charged as this department is with promoting the welfare of the wage earners of the United States, that function may be regarded as having been so far inferentially enlarged as to include citizens within the scope of its intended bene-

fits. The department has therefore through the Division of Information entered upon plans of work for improving the opportunities of the wage earners of the United States, whether citizens or aliens, for profitable employment.

HARVEST HELP.

The first experiment of the department in that direction was made with reference to harvest help just prior to the close of the fiscal year and under the circumstances described below.

Hon. C. L. Daugherty, the State labor commissioner of Oklahoma, made telegraphic inquiries of the department on May 25, 1914, as to the possibility of supplying such help to his State. "We will need," he telegraphed, "from 12,000 to 15,000 men, at from \$2 to \$2.50 per day, with board, to help harvest our wheat and thrash same; and 85 per cent of the men so employed will be given employment in this State by the farmers in handling the various forage crops, which promise a big yield at this time, thereby guaranteeing from four to six months' steady work." Commissioner Daugherty added: "The State will maintain free employment offices at Oklahoma City, Enid, Alva, Woodward, Frederick, and other points in the State to help distribute the men, and any publication you can give this matter through your department will be greatly appreciated by the citizens of this State." Responding immediately to that telegram, the department caused it to be embodied in a bulletin—for display in post offices and publication in newspapers—which notified persons desiring harvesting employment to apply to the State employment offices named in the telegram. This publicity immediately brought similar appeals from Kansas, Missouri, and South Dakota. Thereupon the department issued a further bulletin for display in post offices and publication in newspapers. It was the second bulletin in general substance (that with reference to Oklahoma having preceded it), but the first in the systematic plans of the department to promote the welfare of wage earners of the United States in this way. The bulletin was in these terms:

Postmaster: Please post this in a conspicuous place and have public attention called to it through the press.

U. S. DEPARTMENT OF LABOR,
BUREAU OF IMMIGRATION,
DIVISION OF INFORMATION,
WASHINGTON.

June 4, 1914.

NOTICE.—HARVEST HANDS WANTED IN THE MIDDLE WEST: The Division of Information of the Bureau of Immigration, U. S. Department of Labor, has received telegrams from Kansas, Missouri, and South Dakota concerning the need of harvest hands in those States, in addition to the request from Oklahoma which appeared in bulletin dated May 27, 1914. Persons interested in obtaining

work of this kind should apply to the offices in the States named. *It will be necessary for those desiring work to defray their own expenses to the place of employment.*

Kansas.—40,000 men needed; wages will range upward from \$2 per day and board; average probably \$2.50. Large percentage of men will be needed for from 90 to 120 days. Men can go direct to towns in wheat belt in central and western Kansas and be distributed to farmers by local organizations, or write to W. L. O'Brien, director State free employment bureau, Topeka, Kans., for directions.

Missouri.—30,000 men needed; wages \$2 to \$3.50 per day, according to experience, class of work, and conditions; three to six months' work, beginning about June 15. Apply to State free employment offices at St. Louis, Kansas, City, or St. Joseph, or write to John T. Fitzpatrick, labor commissioner, Jefferson City, Mo., for directions.

South Dakota.—Harvest help needed beginning about July 15; wages \$2 to \$3.50 per day and board. Considerable of the former wheat acreage is now in alfalfa and corn, and help will be needed through husking. Apply to Charles McCaffree, commissioner of immigration, Pierre, S. Dak.

Anticipating the embarrassment, loss, and suffering to which unemployed wage earners have long been exposed by irresponsibly advertised opportunities for farm work at harvest time, the department was careful to phrase the foregoing bulletin so as to put applicants on their guard with reference to wages, to the probable period of employment, to the character and circumstances of the work offered, and to the responsibility of the persons promulgating the call. And there is no reason yet known to the department for supposing or suspecting that applicants who gave reasonable attention to the details set out in the bulletin were in anywise misled to their disadvantage. It is possible, of course, that some among the more belated applicants reached places of demand after the demand had been supplied. If so their misadventure, if not their own fault, was due to the newness of the system. As it develops, the department expects to guard effectively against creating local oversupplies of seasonal workers even at the close of seasons. Its efforts to this end in the fiscal year of the present report consisted in issuing to the respective postmasters and the newspapers the following counter-bulletin:

Postmaster: Please remove from your bulletin board the notices dated May 27, 1914, and June 4, 1914, regarding the need for harvest hands, and substitute this bulletin, giving the latter the same publicity as previous bulletins.

U. S. DEPARTMENT OF LABOR
BUREAU OF IMMIGRATION
DIVISION OF INFORMATION
WASHINGTON

June 24, 1914.

NOTICE REGARDING HARVEST HANDS: The State officials in Kansas, Oklahoma, and Missouri have notified this division that a sufficient number of men have proceeded to those States to meet the demands for help in the harvest fields, and South Dakota advises that many applications are being received for work in the State. All persons are accordingly advised not to proceed to any of these

States with the expectation of procuring work in the harvest fields without first communicating with and securing definite assurances of employment from one of the following officials: W. L. O'Brien, director State free employment bureau, Topeka, Kans.; Charles L. Daugherty, State labor commissioner, Oklahoma City, Okla.; John T. Fitzpatrick, labor commissioner, Jefferson City, Mo.; Charles McCaffree, commissioner of immigration, Pierre, S. Dak.

In the initiation of this important service—the beginning, it is hoped, of an effective national system for handling the perplexing problem of seasonal employment—the Department of Labor has been assisted by the Post Office Department. This assistance is indispensable to the purpose, and further cooperation of the two departments has been arranged. It contemplates the placing by this department with each postmaster of employment blanks which may be had by any person upon request at the post office in office hours. By filling out these blanks farmers needing field help, farmers' wives needing household help, and men and women wishing employment on farms may share in that beneficial distribution of wage earners seeking profitable employment which it is one of the prescribed purposes of the Department of Labor to promote.

FACTORY EMPLOYMENT.

The department has not limited to farm work its use of the Division of Information in the Bureau of Immigration. Having directed the facilities of this division to the relief of wage-earning victims of the disastrous fire of June 25, 1914, at Salem, Mass., it has proved its ability to assist wage earners who are thrown out of employment and made homeless by public calamities, and to do so without displacing or otherwise injuriously affecting other wage earners.

Supposing the Department of Labor to be in possession of data that might be utilized in finding employment for the wage-earning victims of that fire—for the most part workers in the boot and shoe and the cotton industries—the local relief committee at Salem applied to the department for information. Their application reached the department after the close of the fiscal year, but inasmuch as the matter relates to the general but as yet undeveloped plans indicated above with reference to beneficial distributions of wage earners, the department's action is reported here. Upon receipt of the application of the local relief committee the department notified 695 manufacturers of boots and shoes and 918 manufacturers of cotton textiles—some by telegram and others by letter—in New York, Pennsylvania, New Jersey, Delaware, Maryland, and the New England States of the industrial circumstances at Salem, and asked if employment could be offered. The replies were numerous and gratifying and in their results so far helpful that from July 14 the number of unemployed at Salem rapidly dwindled.

The Chief of the Division of Information, acting under the direction and supervision of the Department of Labor, went in person to Salem, where he was welcomed and aided by the relief committee at Salem and the Massachusetts Free Employment Bureau at Boston, to which all responses to the department's telegrams and letters mentioned above were sent. The railroads also assisted by furnishing transportation to the sufferers as fast as employment for them was found. In order to avoid industrial conflicts and misunderstandings such as not infrequently occur in similar emergencies, representatives of labor organizations in the trades affected were invited and came into cordial cooperative relations with all others concerned in the matter.

Of about 12,000 wage earners in Salem who lost their homes by the fire, about 3,670 were thrown out of employment as a direct result of the fire, which totally destroyed 20 factory plants and about 3,000 homes.

The responses through this department to its appeals are reported to have been approximately as follows:

July 14.....	213	July 20.....	551
July 15.....	77	July 21.....	27
July 16.....	71	July 28.....	75
July 17.....	77		
July 18.....	171	Total	1,262

This table takes no account of responses made otherwise than through the department, which are reported to have been from 300 to 400.

Not less than 1,500 places are reported to have been opened through the action of this department described above, into which these unfortunate wageworkers could fit at once. They outnumber by far the total of skilled workers whom the fire displaced.

NEWSPAPER PUBLICITY.

Another method of promoting beneficial distributions of wage-workers which the Division of Information has developed during the fiscal year began with an arrangement between its distribution branch at New York City and the New Yorker Staats-Zeitung, a newspaper printed there in the German language, whereby that newspaper gives free publicity to brief notices of such opportunities for employment on farms as come to the Department of Labor through the Division of Information. The success of the experiment was so marked from the beginning that the following letter from the Commissioner General of Immigration, approved by the Secretary of Labor, and bearing date June 13, 1914, was sent by the department to all the leading foreign-language newspapers in the United States,

and one of like tenor to all the leading American newspapers in the larger centers of population:

The Division of Information of the Bureau of Immigration, Department of Labor, has been engaged in the work of promoting a beneficial distribution of aliens admitted to the United States, as directed by law, and in addition, under its general powers, a like distribution of residents and citizens of the United States who wish to avail themselves of opportunities for labor afforded through its instrumentality. For this purpose the Division of Information, as part of the Bureau of Immigration, was established. This division has been in receipt of applications from farmers and others resident in every State of the Union, offering to hire men and women of the nationality and experience designated, often giving terms and other information; and, so far as the means of publicity have permitted, the division has brought these to the attention of persons seeking farm and other employment, whether residents or aliens admitted at our immigration stations. Many have in this way secured employment outside of the industrial centers of the country. The division has sought, in the past, and is now desirous of availing itself of, every avenue offered by State, county, or municipal authority, or otherwise, to secure publicity and further this work. The managers of the *New-Yorker Staats-Zeitung*, a newspaper printed in New York City in the German language, patriotically offered to establish, free of charge to the Government or to applicants, a department in their journal devoted to the publication of such farm-employment opportunities as came to the Division of Information in the manner above stated. An experience of 90 days in this entirely new field of publicity discloses the fact that during said period 516 Germans responded, and of that number 283 are known to have been placed at remunerative employment. The applicants have been located in 20 different States, New York and New Jersey receiving the greater part, due largely to the small cost of transportation from New York City, although Wisconsin, credited with 35, Michigan with 12, and Illinois with 9, received a substantial proportion of those so placed.

The average wage of those accepting employment was \$24.01 per month, including board and lodging. In other words, through this single channel of publicity for one nationality alone, there has resulted in three months the placing of 283 Germans on farms, where they have become producers.

From the success that has attended this undertaking it is believed that with the cooperation of the foreign-language newspapers generally, and with distribution branches established at the principal ports of entry and the leading cities, with officers in charge, as now maintained at New York City, the results attained would far exceed even the gratifying showing which the first experiment has demonstrated.

If your publication is willing to cooperate as above indicated, please advise the bureau to that effect. The inclosed envelope for reply will require no postage.

Favorable responses to this letter have already been received from 25 papers published in foreign languages and 20 in the English language, and circumstances confirm the belief that this number will be greatly and rapidly increased.

DISTRIBUTION ZONES.

The fiscal year closed with preliminary steps looking to the establishment of distribution centers throughout the United States, thus

extending by zones over the whole country the work of beneficial distribution of wage earners as now established at New York City. Following are the zones and their headquarters or centers as at present contemplated, with the names of immigration officers in charge:

Zones for distribution offices.

Zone No.	Station and officer in charge.	Territory.
1	Boston, Mass., Inspector Wm. J. Burke; Providence, R. I., Inspector James A. Sullivan; Portland, Me., Inspector Timothy Elliott.	Massachusetts, Rhode Island, and Maine.
2	New York City, Distribution Branch (and Ellis Island, N. Y.), Inspector in Charge C. L. Green; Buffalo, N. Y.	New York, New Jersey, New Hampshire, Connecticut.
3	Philadelphia, Pa.; Pittsburgh, Pa.	Pennsylvania, Delaware, West Virginia.
4	Baltimore, Md., Inspector Walter L. Opdyke.	Maryland.
5	Norfolk, Va., Inspector Edwin B. Schmucker.	Virginia, North Carolina.
6	Jacksonville, Fla., Inspector Gideon B. Travis; Savannah, Ga., Inspector Edgar T. Whitley; Mobile, Ala., Inspector H. C. Brownlow; Birmingham, Ala., Inspector J. N. Benners; Charleston, S. C., Inspector W. V. Howard.	Florida, Georgia, Alabama, South Carolina.
7	New Orleans, La., Inspector Jamil B. Holway; Gulfport, Miss., Inspector H. M. Course; Memphis, Tenn., Inspector Joseph T. Ware.	Louisiana, Mississippi, Arkansas, Tennessee.
8	Galveston, Tex., Inspector Raymond G. Miller; Albuquerque, N. Mex. (under El Paso).	Texas, New Mexico.
9	Cleveland, Ohio, Under Clerk William Kramer.	Ohio, Kentucky.
10	Chicago, Ill., Inspector James Hogan (sec. 24); Detroit, Mich., Inspector in Charge G. Oliver Frick.	Illinois, Indiana, Michigan, Wisconsin.
11	Minneapolis, Minn., Inspector in Charge Chas. W. Seaman.	Minnesota, North Dakota, South Dakota.
12	St. Louis, Mo., Inspector W. R. Mansfield; Kansas City, Mo., Inspector H. C. Allen; Des Moines, Iowa, Inspector P. H. Stretton.	Missouri, Kansas, Oklahoma, Iowa.
13	Denver, Colo., Inspector W. R. Mansfield; Salt Lake City, Utah, Inspector D. A. Plumley.	Colorado, Wyoming, Nebraska, Utah.
14	Helena, Mont., Inspector in Charge L. T. Plummer (or Chas. K. Andrews); Moscow, Idaho, Inspector W. J. McConnell (sec. 24).	Montana, Idaho.
15	Seattle, Wash., Inspector Lawrence Wood.	Washington.
16	Portland, Oreg., Inspector in Charge J. H. Barbour.	Oregon.
17	San Francisco, Cal., Inspector David J. Griffiths; Sacramento, Cal., Inspector C. H. Hannum; Fresno, Cal.	Northern California, Nevada.
18	Los Angeles, Cal., Inspector Joseph A. Conaty; San Diego, Cal., Inspector George H. Sweet; Tucson, Ariz., Inspector Alfred E. Burnett.	Southern California, Arizona.

The purpose of this arrangement is to promote profitable employment by means of publicity, to relieve the congestion of industrial centers, and to awaken interest in farm work and other rural vocations. As already explained, it is not intended to limit the activities of these distribution offices to aliens, but in virtue of the liberal authority conferred upon the department by its organic act to extend them to our own citizens, women as well as men, under such circumstances as to give to all the fairest possible chance that prevailing industrial conditions permit. In the administration of this service special care will be taken to prevent fraud by giving the utmost publicity to all pertinent facts regarding opportunities for employment and to guard against both undue scarcity and excessive supply of wage earners in so far as that can be done under existing laws.

STATE LABOR BUREAUS.

In the same manner as it has been the policy of this department to cooperate with State authorities in the adjustment of trade disputes, it will cooperate with all State and municipal establishments organ-

ized in whole or in part for the welfare of wage earners, including official employment bureaus, in carrying out plans for a beneficial distribution of wage-earning laborers under section 40 of the immigration statutes as affected by the purpose clause of section 1 of the organic act of the Department of Labor. Sympathetic intercourse and hearty cooperation between this department and all such establishments in respect of all matters concerning the welfare of the wage earners of the United States are earnestly desired by the department.

BUREAU OF LABOR STATISTICS.

The oldest in the Department of Labor, the Bureau of Labor Statistics has the further distinction of being historically its legislative nucleus, the series of congressional acts which culminated in the creation of the department having begun with the creation of this bureau.

POWERS AND DUTIES.

The title "Bureau of Labor Statistics" does not indicate the scope of the bureau's functions. Its present designation dates from the act of March 4, 1913, creating the Department of Labor. Section 3 of that act changes the title of the bureau from "Bureau of Labor" to "Bureau of Labor Statistics" and that of "Commissioner of Labor" to "Commissioner of Labor Statistics." After placing the bureau under the jurisdiction and supervision of the Department of Labor the same section specifies that "all the powers and duties heretofore possessed by the Commissioner of Labor shall be retained and exercised by the Commissioner of Labor Statistics." This language refers to the act of June 27, 1884, which reads: "The commissioner shall collect information upon the subject of labor, its relation to capital, the hours of labor, and the earnings of laboring men and women, and the means of promoting their material, social, intellectual, and moral prosperity," and to section 1 of the act of June 13, 1888, which specifies that the then Department of Labor (now the Bureau of Labor Statistics) shall "acquire and diffuse among the people of the United States useful information on subjects connected with labor, in the most general and comprehensive sense of that word, and especially upon its relation to capital, the hours of labor, the earnings of laboring men and women, and the means of promoting their material, social, intellectual, and moral prosperity." Section 4 of the organic act of the present Department of Labor—the aforesaid act of March 4, 1913—further requires the Bureau of Labor Statistics, under the direction of the Secretary of Labor, to "collect, collate, and report at least once each year, or oftener if necessary, full and complete statistics of the conditions of labor and the products and distribution of the products of the same."

Considered with reference to its statutory relations to the Department of Labor and to the general purpose of this department as prescribed by its own organic act, the Bureau of Labor Statistics may be regarded as having (subject to the direction of the Secretary of Labor) fact-collecting, fact-collating, and fact-reporting powers and duties, statistical and otherwise, coextensive with all the administrative powers and duties of the Department of Labor regarding the welfare of wage earners.

OPERATIONS DURING THE FISCAL YEAR.

REPORTS PUBLISHED.

During the fiscal year ended June 30, 1914, its first full fiscal year under the jurisdiction of the Department of Labor, the Bureau of Labor Statistics, to the official report of which attention is directed for information in greater detail, published 26 serial bulletins and 1 nonserial volume. Each of the serial bulletins is devoted to one of a series of general subjects: Retail prices and cost of living, Wages and hours of labor, Women in industry, Workmen's insurance and compensation, Industrial accidents and hygiene, Conciliation and arbitration, and Miscellaneous.

Retail prices and cost of living.—Seven bulletins of this series were published. Five of them, issued at bimonthly intervals from April to December, 1913, continue the statistics regularly published by the bureau relating to the retail prices of the principal articles of food, the retail prices of anthracite and bituminous coal for household use, and the net price of gas for household use; the first two cover 39 and the other three 40 of the most important industrial cities in the United States. The subjects of the other two bulletins in the series are Sugar Prices from Refiner to Consumer and Wheat and Flour Prices from Farmer to Consumer.

Wages and hours of labor.—In this series seven bulletins were issued, of which five relate to wages and hours of labor in the following industries, respectively: (1) Cotton, woolen, and silk; (2) lumber, millwork, and furniture; (3) boot and shoe and hosiery and knit goods; (4) cigars and clothing; and (5) the building and repairing of steam-railroad cars. The other two relate to union scales of wages and hours of labor (1) for the years 1907 to 1912, and (2) for May 15, 1913.

Women in industry.—The only bulletin in this series that was issued during the fiscal year is a study of the employment of women in power laundries in the city of Milwaukee, Wis.

Workmen's insurance and compensation.—There was one bulletin of this series published, its subject being Workmen's Compensation Laws of the United States and Foreign Countries. It analyzes all

such laws, recounts the activities of commissions appointed to consider the subject, and gives the literal text of laws enacted in this country.

Industrial accidents and hygiene.—Three bulletins appear in this series, the first, relating to the hygiene of the painter's trade, includes (1) an explanation of the dangers to which painters are exposed and how they may be avoided, (2) an account of the extent of lead poisoning in this occupation in this country and in Europe, and (3) a statement of the foreign regulations governing the use of lead paint. The second bulletin treats of the dangers to workers from dusts and fumes in certain industries and describes methods of protection. It contains a number of illustrations made from photographs of employees at work under both good and bad conditions. The third deals with lead poisoning in the smelting and refining of lead, and has special reference to the extent of lead poisoning, the processes which expose to dust and fumes, and what is needed for the protection of lead workers. Conditions in European countries are also described and the regulations which are in effect are given.

Conciliation and arbitration.—In this series four bulletins were published. The first is a report on conciliation and arbitration in the building trades of Greater New York; the second is an analysis and reprint of the report on industrial agreements recently made by the Industrial Council of the British Board of Trade; the third is a report on the strike of mine workers which began July 23, 1913, in the Michigan copper district, being the report to which reference has already been made herein in connection with the year's work in the Office of the Secretary; the fourth, a report entitled "Industrial Court of the Cloak, Suit, and Skirt Industry of New York City," relates especially to the work of the board of grievances established under an agreement adopted September 2, 1910, by the associations of employers and employees in that industry, for the purpose of settling industrial disputes.

Miscellaneous series.—Two of the three bulletins in this series are translations of memorandums prepared by the International Labor Office for the information of conferences called to meet in Berne, Switzerland, in September, 1913, to consider the adoption of international treaties providing for prohibition of night work and the establishment of the 10-hour working-day for women and young persons. The third is an account of employers' welfare work in various establishments of the United States.

Nonserial volume.—Besides the above-mentioned reports issued in the form of serial or numbered bulletins, the bureau has published during the fiscal year a separate volume, identified by no serial number, which contains a compilation of the mediation and arbitration laws of the United States.

REPORTS TRANSMITTED BUT NOT PUBLISHED.

In addition to the serial bulletins and the separate volume described above, 12 bulletins were sent to the Public Printer before the end of the fiscal year, but not in time to complete the necessary work of printing. Their publication therefore did not occur until after the close of the fiscal year for which this report is made. In the order of transmittal their subjects are as follows: "Administration of labor laws and factory inspection in certain European countries;" "Conciliation, arbitration, and sanitation in the dress and waist industry of New York City;" "Wages and regularity of employment and standardization of piece rates in the dress and waist industry of New York City;" "Wages and regularity of employment in the cloak, suit, and skirt industry of New York City;" "Labor laws of the United States, with decisions of courts relating thereto;" "Wholesale prices, 1890 to 1913;" "Wages and hours of labor in the cotton, woolen, and silk industries, 1907 to 1913;" "Wages and hours of labor in the iron and steel industry in the United States, 1907 to 1912;" "Decisions of courts and opinions affecting labor, 1913;" "Wages and hours of labor in the lumber, millwork, and furniture industries, 1907 to 1913;" "Wages and hours of labor in the boot and shoe and hosiery and knit goods industries, 1907 to 1913;" "Federal and State laws relating to convict labor" (S. Doc. 494, 63d Cong., 2d sess.).

REPORTS IN COURSE OF PREPARATION.

Additional bulletins in course of preparation at the end of the fiscal year relate to wholesale and retail prices, wages and hours of labor, women in industry, industrial accidents, occupational diseases, hygiene, morbidity and mortality of wage earners, foreign labor laws, Government aid to home owning and housing of working people in European countries, industrial education, compensation for accidents to employees of the United States, summary of report on condition of woman and child wage earners in the United States.

INJURIES TO GOVERNMENT EMPLOYEES.

Supplementing its powers and duties of investigating and reporting labor conditions, the Bureau of Labor Statistics is charged with administering, under the direction and supervision of the Department of Labor, the act of Congress of May 30, 1908, which allows compensation for accidental injuries to certain Government employees.

Substance of the law.—This act as amended from time to time is summarized as follows:

When any person employed by the United States as an artisan or laborer in any of its manufacturing establishments, arsenals, or navy yards, or in the con-

struction of river and harbor or fortification work, or in hazardous employment on construction work in the reclamation of arid lands or the management and control of the same, or hazardous work under the Bureau of Mines or in the Forestry or Lighthouse Service, is injured in the course of such employment, such employee shall be entitled to receive for one year thereafter, unless such employee in the opinion of the Secretary of Labor be sooner able to resume work, the same pay as if he continued to be employed, such payment to be made under such regulations as the Secretary of Labor may prescribe.

If any artisan or laborer so employed shall die during the said year by reason of such injury received in the course of such employment, leaving a widow, or a child or children under 16 years of age, or a dependent parent, such widow and child or children and dependent parent shall be entitled to receive, in such portions and under such regulations as the Secretary of Labor may prescribe, the same amount for the remainder of the said year that said artisan or laborer would be entitled to receive as pay if such employee were alive and continued to be employed: *Provided*, That if the widow shall die at any time during the said year her portion of said amount shall be added to the amount to be paid to the remaining beneficiaries under the provisions of this section, if there be any.

Claims to compensation.—Following is the bureau's report upon its administration of the foregoing statutes during the fiscal year ended June 30, 1914:

Claims pending at beginning of year:	
For injuries not resulting in death.....	29
For injuries resulting in death.....	2
Total.....	31
Claims received:	
Injury claims.....	2,481
Death claims.....	77
	2,558
Claims subject to consideration:	
Injury.....	2,510
Death.....	79
	2,589
Allowed for injuries not resulting in death.....	2,400
Allowed for injuries resulting in death.....	62
Total claims allowed.....	2,462
Disallowed injury claims.....	84
Disallowed death claims.....	14
Total claims disallowed.....	98
Claims pending at close of fiscal year:	
Injury claims.....	26
Death claims.....	3
	29
	2,589

The number of claims received for the fiscal year was greater than those received during the previous year by 142, of which the increase in injury claims was 118 and in death claims 24.

Other statistics of injuries.—In connection with this work of the bureau provision is made, regardless of the act of Congress sum-

marized above, for reporting accidental injuries to Government employees of any class if the injury occurs in the course of employment and causes disability for one day or longer or results in death. The total number of accidents reported in that connection for the current fiscal year was 5,461 (including 143 resulting deaths), an increase of 312 over the preceding year, when 5,462 accidents (including 92 resulting deaths) were reported.

Injuries at Panama Canal.—None of the foregoing figures include claims for injuries suffered by Government employees at the Panama Canal. The act originally covered employment under the Isthmian Canal Commission, but on March 4, 1911, an amending law took effect transferring to the Isthmian Canal Commission the administration of the law in so far as it affects employees of that commission, and the law as amended was extended in scope so as to include all employees of the commission without regard to the hazardous or nonhazardous character of their employment. One year, instead of 90 days as in the original act, is allowed for the filing of claim in case of death. The law ceased to apply to employment under the commission on April 1, 1914, by reason of an Executive order which took effect on that date providing that, under the direction of the governor of the Panama Canal, the United States or the Panama Railroad Co. should pay compensation for personal injuries to their respective employees working on the Panama Canal or the Panama Railroad.

BUREAU OF IMMIGRATION.

The largest and with one exception the oldest bureau under the jurisdiction and supervision of the Department of Labor is the Bureau of Immigration, which, subject to that jurisdiction and supervision, executes the immigration and the Chinese-exclusion laws. The following summary of the work of this bureau for the fiscal year 1914 relates, like that for the Bureau of Labor Statistics, to its first full year's work under the jurisdiction of this department. For greater detail reference should be had to the official report of the bureau.

ALIEN ARRIVALS AND DEPARTURES.

The record of arrivals and departures of aliens during the year was as follows:

ARRIVALS.	
Immigrant aliens.....	1, 218, 480
Nonimmigrant aliens.....	184, 601
Total alien arrivals.....	1, 403, 081
Previous year:	
Immigrant.....	1, 197, 892
Nonimmigrant.....	229, 335
	1, 427, 227

Increase or decrease:

Immigrant increase..... 20,588

Nonimmigrant decrease..... 44,734

Net decrease..... 24,146

DEPARTURES.

Emigrant aliens..... 303,338

Nonemigrant aliens..... 330,467

Total alien departures..... 633,805

Previous year:

Emigrant..... 308,190

Nonemigrant..... 303,734

611,924

Increase or decrease:

Emigrant decrease..... 4,852

Nonemigrant increase..... 26,733

Net increase..... 21,881

INCREASE IN ALIEN POPULATION, 1913 AND 1914.

Arrivals (1913)..... 1,427,227

Departures (1913)..... 611,924

Net increase (1913)..... 815,303

Arrivals (1914)..... 1,403,081

Departures (1914)..... 633,805

Net increase (1914)..... 769,276Decrease in net addition to population (1914)..... 46,027

Decrease in aliens admitted, 1.7 per cent.

Decrease in net addition to population, 5.6 per cent.

CONDITION OF ADMITTED ALIENS.

AGE.

Under 14 years..... 158,621

Between 14 and 44 years..... 981,692

Over 45 years..... 78,167

1,218,480

ILLITERACY.

Total over 14 years..... 1,059,859

Unable to read or write..... 260,152

Able to read but not write..... 3,074

Illiterate..... 263,226Literate..... 796,633

Illiterate, 24.8 per cent.

Financial ability.—There were shown to inspection officers by the aliens admitted during the year sums of money aggregating \$42,553,266, an average of about \$35 per person, but how much of this was furnished by relatives or friends living in the United States

there is no way to determine. Amounts of less than \$50 each were shown by 737,079 of the aliens; amounts in excess of that sum were shown by 172,394. About 81 per cent, therefore, of those able to prove possession of money had less than \$50 each. While 770,245 claimed to have paid their own passage, 436,343 admitted that their passage had been paid by relatives and 11,892 that it had been paid by persons other than relatives. These figures do not show the full extent to which aliens coming to this country are assisted, but, accurate as far as they go, they do show that nearly 37 per cent belong to that class.

Ages and periods of residence of departing aliens.—During the year 303,338 emigrant aliens migrated from the United States. With respect to 31,421 no record could be procured concerning length of residence here, as they left across the Canadian border. It is shown, however, that of the remainder 201,018 had resided in the United States less than 5 years, 53,675 from 5 to 10 years, 12,948 from 10 to 15 years, 1,398 from 15 to 20 years, and 2,878 over 20 years. As to ages, 13,117 were under 14 years, 256,044 were from 14 to 44, and 34,177 were 45 or over.

EXCLUSIONS OF ARRIVING ALIENS.

The number of aliens excluded in 1914 exceeded the number excluded the previous year by 66 per cent. Exclusions in 1913 amounted to 1.38 per cent of the number applying, but in 1914 this went up to 2.3 per cent. The totals are 33,041 for 1914 and 19,938 for 1913.

The causes for which aliens have been refused admission being of general interest and special importance, the following table from the report of the Commissioner General of Immigration is quoted here in order to furnish comparisons with reference to each principal cause for the years 1907 to 1914, inclusive:

Cause of rejection.	1907	1908	1909	1910	1911	1912	1913	1914
Idiots.....	29	20	18	16	12	10	18	14
Imbeciles.....		45	42	40	26	44	54	68
Feeble-minded persons.....		121	121	125	126	110	483	995
Insanity (including epileptics).....	189	184	167	198	144	133	198	197
Likely to become a public charge (including paupers and beggars).....	6,866	3,741	4,458	15,927	12,048	8,182	7,956	15,784
Afflicted with contagious diseases.....	3,822	2,847	2,308	3,033	2,735	1,674	2,457	3,143
Afflicted with tuberculosis.....		59	82	95	111	74	107	114
Physically or mentally defective.....		870	370	312	3,055	2,288	4,208	6,537
Criminals.....	341	136	273	530	644	592	808	755
Prostitutes and other immoral aliens.....	18	124	323	316	253	263	367	380
Procureurs of prostitutes.....	1	43	181	179	141	192	253	254
Contract laborers.....	1,434	1,932	1,172	1,786	1,336	1,333	1,624	2, 93

SUMMARY OF ARRIVALS AND EXCLUSIONS.

The following statement, summarizing the totals of arrivals, exclusions, and admissions of aliens for the fiscal year closed June 30,

1914, should be compared with a similar statement in the report for 1913, at pages 30 and 31:

Arrivals of aliens, July 1, 1913, to June 30, 1914-----	1, 436, 122
Detained for special inquiry-----	155, 599
Admitted on primary inspection-----	1, 280, 523
Detained for special inquiry-----	155, 599
Rejected by boards of special inquiry-----	35, 943
Admitted by boards of special inquiry-----	119, 656
Appeals to Secretary of Labor-----	8, 657
Petitions to Secretary of Labor for bonding-----	81
Cases before Secretary of Labor-----	8, 738
Rejected by Secretary of Labor-----	5, 836
Admitted by Secretary of Labor:	
On appeal-----	1, 937
On bonds-----	965
	2, 902
	2, 902
Aliens admitted-----	1, 403, 081
Aliens excluded-----	33, 041
Total alien arrivals-----	1, 436, 122
Ratio of admissions to arrivals, 97.7 per cent.	
Ratio of exclusions to arrivals, 2.3 per cent.	

ALIEN CONTRACT LABORERS.

During the year, 2,793 aliens were excluded and 51 expelled as contract laborers. The figures for the previous year were 1,624 excluded and 54 expelled. But that does not represent all that has been done in execution of the law relating especially to contract laborers. During the entire year a number of inspectors were assigned almost exclusively to this work. Through their efforts and those of officers assigned to immigration work in general, and the cooperation of United States attorneys, many investigations have been conducted and civil suits and criminal prosecutions brought. In this way the law is made effective as a preventive measure. The extent, however, of its effectiveness in that regard is not easily measured.

The most important single event of the year in this connection was the handing down by the Supreme Court of the United States of its decision in the case of the Grant Bros. Construction Co. (232 U. S., 647). Upholding the law in every respect in which it was questioned, the court sustained the circuit court of appeals in its decision assessing a fine of \$45,000 against the company for having attempted to supply itself with 45 laborers by importing them from Mexico.

Another notable case was settled during the year by payment to the Government by the offender, the Dwight Manufacturing Co., of Boston and Chicopee Falls, Mass., of \$50,000.

In a large number of other cases smaller fines were collected either by the successful institution of suits or by compromise. The law is much more effectively enforced in this way than by merely excluding or expelling the alien contract laborers themselves.

EXPULSIONS OF ALIENS.

During the year 4,580 aliens were expelled from the country on departmental warrants, the number for the previous fiscal year being 3,461. The 4,580 expelled during the current year fall into the following general divisions as to causes for expulsion:

In the country 3 years or less:

Members of excluded classes at time of entry-----	2, 028
Became public charges from causes existing prior to entry-----	1, 091
Became prostitutes after entry-----	130
Supported by proceeds of prostitution-----	61
Entered without inspection-----	1, 055
Members of the class created by the act of Mar. 26, 1910, viz, the sexually immoral, notwithstanding that they have been in the country more than 3 years-----	215
	4, 580

TOTAL DEPORTATIONS.

In order to arrive at the total of deportations the 4,580 expulsions on warrants tabulated above are to be added to the 33,041 exclusions previously tabulated. They aggregated for the year 37,651 aliens deported to the countries whence they came on the various grounds of expulsion and exclusion which are specified in the immigration laws.

INFLUENCE OF THE WAR IN EUROPE.

The outbreak of the European war precipitated a sharp decline in immigration. Having occurred after the fiscal year the data are not yet reported by the Bureau of Immigration. Inasmuch, however, as the subject is of great present interest the Secretary's report for the current fiscal year may properly state the principal facts.

Until early in August immigration was not far from normal by the standards of the fiscal years ended June 30, 1913, and June 30, 1914. Signs of extraordinary decline in trans-Atlantic arrivals were then observed. Notwithstanding this and the subsequent decline, however, the department was embarrassed by alternatives which the circumstances presented in the case of nonadmissibles. To deport was to subject them to the dangers of destruction or capture by belligerents on the high seas; to admit them outright would have been indefensible; and detention without limit would have involved unusual expense and much individual hardship. In this emergency the

department suspended all Atlantic deportations until assured of safety of transport. Meanwhile, in order to mitigate their hardships, aliens indefinitely awaiting deportation were released temporarily under bond. In the course of two months safety of transport had become general enough to warrant deportation by most of the Atlantic lines, and in this respect the regular practice has been resumed.

The following tabulation exhibits by statistical contrasts the influence of the war upon the volume of immigration so far as it can be determined by experience down to September 30, 1914:

Effect of the European war on immigration.

Period.	Trans-Atlantic alien arrivals.			Other alien arrivals.			Total alien arrivals.		
	Admitted.	Debarred.	Total.	Admitted.	Debarred.	Total.	Admitted.	Debarred.	Total.
1912.									
July.....	80,680	779	81,459	9,838	618	10,456	90,518	1,397	91,915
Aug. 1 to 6.....	16,898	234	17,132	2,160	125	2,285	19,058	359	19,417
Aug. 7 to 31.....	70,090	1,028	71,118	8,653	535	9,188	78,743	1,563	80,306
Sept.....	116,125	1,004	117,129	12,341	573	12,914	128,466	1,577	130,043
1913.									
July.....	140,114	1,612	141,726	14,488	1,096	15,584	154,602	2,708	157,310
Aug. 1 to 6.....	26,049	253	26,302	3,190	205	3,395	29,239	458	29,697
Aug. 7 to 31.....	101,658	1,141	102,799	11,758	880	12,638	113,416	2,021	115,437
Sept.....	139,084	1,167	140,251	17,604	1,170	18,774	156,688	2,337	159,025
1914.									
July.....	61,409	984	62,393	10,606	1,398	12,004	72,015	2,382	74,397
Aug. 1 to 6.....	12,294	73	12,367	2,772	468	3,240	15,066	541	15,607
Aug. 7 to 31.....	25,920	59	25,979	10,245	1,586	11,831	36,165	1,645	37,810
Sept.....	28,295	220	28,515	16,329	2,487	18,816	44,624	2,707	47,331

Period.	Average daily alien arrivals.		
	Trans-Atlantic.	Others.	Total.
1912.			
July 1 to Aug. 6.....	2,665	344	3,009
Aug. 7 to Sept. 30.....	3,423	402	3,825
1913.			
July 1 to Aug. 6.....	4,541	513	5,054
Aug. 7 to Sept. 30.....	4,419	571	4,990
1914.			
July 1 to Aug. 6.....	2,021	412	2,433
Aug. 7 to Sept. 30.....	991	557	1,548
Percentage of decrease (—) for period July 1 to Aug. 6, 1914, compared with average of same periods of 1912 and 1913.....	—44	—4	—40
Percentage of decrease (—) or increase (+) for period Aug. 7 to Sept. 30, 1914, compared with average of same periods of 1912 and 1913.....	—75	+15	—65

Arrivals through Atlantic seaports of Canada destined to the United States are included with trans-Atlantic arrivals.

IMMIGRATION STATIONS.

The general statement regarding immigration stations which was made in the first annual report should be repeated here:

For a satisfactory administration of the immigration laws, the character and condition of immigrant stations at ports of entry are

of prime importance. So far, therefore, as the Department of Labor is permitted by law and equipped for the purpose, it aims to make these stations as much like temporary homes as possible. While regulation and exclusion, and therefore detention, are necessary in respect of immigration, it should be understood by all who participate in administering these laws that they are not intended to be penalizing. It is with no unfriendliness to aliens that immigrants are detained and some of them excluded, but solely for the protection of our own people and our own institutions. Indifference, then, to the physical or mental comfort of these wards of ours from other lands should not be tolerated. Accordingly, every reasonable effort is made by the department, within the limits of the appropriations, to minimize all the necessary hardships of their detention and to abolish all that are not necessary.

Ellis Island station.—The humane policy indicated in the above quotation was generally pursued through the fiscal year, and innovations with a view to its more complete realization have since been made under the direction of the recently appointed commissioner, Frederic C. Howe. The character, extent, and results of these experiments in minimizing the necessary hardships of detention will be described in the next annual report.

Explosives near the Ellis Island station.—The dangers to Government property and human life at Ellis Island from transshipment and carriage of explosives in New York Harbor, which were explained at pages 37-39 of my first annual report, do not appear to have been any better guarded against during the fiscal year for which this report is made than before. Neither this department nor the Bureau of Immigration, however, has any jurisdiction to interfere.

Charleston station.—For the reasons stated in my first report, the newly constructed station at Charleston has not yet been put into service. There being no immigration at Charleston to bring it into use for immigration purposes, it is still in the care of a watchman.

Boston station.—Appropriations for the new structure at Boston not having yet been made in sufficient amount to provide for execution of the plans prepared by the Supervising Architect, the matter rests where it did at the time of my first report, except that by act of Congress approved October 22, 1913, authority to construct the station was transferred, together with the unexpended balance of appropriations previously made therefor, from this department to the Treasury Department.

Philadelphia station.—Construction of the inspection building contemplated for the landing pier of the Philadelphia station at Gloucester, N. J., continues in abeyance, as at the time of my first report, for lack of the necessary appropriation to proceed with the work.

Interior station at Chicago.—At the time of my first report arrangements were in progress for utilizing the interior immigrant

station at Chicago, regarding which, inasmuch as the station was constructed in the present fiscal year, the following is quoted from that report:

An improvement in the care by the Federal Government of aliens about to be admitted into this country is contemplated by the act of Congress providing for immigration stations at interior places. Stations have been maintained heretofore only at ports or places of entry. From those points the immigrant, after being admitted, has been left by the Government to shift for himself; but under the interior-stations act immigrants will have Government protection until they are discharged from the interior station nearest their destination.

The act of Congress in question, "An act to extend the power of the Commissioner General of Immigration, subject to the approval of the Secretary of Commerce and Labor," now the Secretary of Labor, approved February 25, 1913, provides for the establishment and maintenance of "immigrant stations at such interior places as may be necessary," and, "in the discretion of the said Secretary," that "aliens in transit from ports of landing to such interior stations shall be accompanied by immigrant inspectors." Cost of transportation, however, is not to be borne by the Government.

Although that act provides for stations at all necessary places in the interior, the only appropriation it carried was for the "establishment and maintenance of such a station in the city of Chicago for the fiscal year ending June 30, 1914," the amount of this appropriation being \$75,000.

Difficulties were experienced in procuring suitable housing accommodations in Chicago, but these have been overcome. The station was located in November at the Newbury Building, on the corner of Wabash Avenue and East Ninth Street. Dr. P. L. Prentiss has been placed in charge. Further arrangements are now in progress for the safe conduct of admissible immigrants destined to points beyond Chicago from their port or place of entry to the station at Chicago, and thereafter until they are properly routed thence to their respective destinations. On their way to Chicago they will be in charge of immigrant officials—inspectors for men and matrons for women.

The statement above that an appropriation of \$75,000 was made for the Chicago station is erroneous. The act "authorized" that sum but did not "appropriate" it. An appropriation of \$20,000 was subsequently made, however, and with the latter amount the housing accommodations mentioned above were procured and organized. This station, well equipped and in complete readiness for comfortable use, is now occupied by the officials of the Bureau of Immigration at Chicago for the performance of their duties. For its primary purpose, however, it is still almost unused. The placing of interior-bound immigrants in charge of immigration officials en route has become practicable only since the close of the fiscal year; and, quite apart from that cause of delay, immigrants are indisposed to transfer at Chicago from the railroad station to the immigrant station. Their controlling reason apparently is that they are required to pay

a local transfer agency for city transportation. This obstacle is in process of removal, tentative arrangements for the purpose having been made with the railway companies carrying Chicago-bound immigrants to transfer them from their respective terminal stations in Chicago to the immigrant station without extra charge. The details of this arrangement are in process of adjustment.

Railway bureau at Ellis Island.—For several years prior to the creation of the Department of Labor a railway bureau or clearing house for immigrants had been and it still is maintained by railways doing a west-bound immigrant business. Questions regarding the legality of its operations having arisen during the fiscal year 1914, but prior to my first annual report, the situation was therein stated as follows:

Among the extra-official organizations at the Ellis Island immigration station (New York Harbor) is a bureau for the railway distribution of immigrants after admission. Maintained by and at the expense of various railroads, but with the assent of the Immigration Bureau, it has been in operation for several years. This railway bureau appears to have sprung out of a moral necessity for protecting immigrants from fraudulent practices at the port and in the city of New York in connection with their purchases of railway transportation. Landed without railroad tickets, though with money for purchasing them, they, in their ignorance of American travel, were at the mercy of transportation solicitors. This abuse led the ocean steamer lines into developing a system of selling tickets to their immigrant passengers from points of departure abroad to final destinations here. In order, however, that the railways of the United States might share proportionately the steamer companies left the routing of the immigrants to arrangements among the railroads themselves. The railway bureau was accordingly organized. Its services have been welcomed by the Bureau of Immigration in the interest of the immigrant. It exchanges railway tickets for certificates issued by the steamship lines showing that transportation has been paid not only across the ocean but by rail to the point of destination. But the steamship companies are understood to exact of railroads \$1.50 per capita for each immigrant routed by the railway bureau over the respective railroad lines. The railroads have submitted to this exaction, apparently because they have understood that immigration traffic might be diverted from any of them refusing to pay it. Dissatisfaction has consequently arisen, so this department is authoritatively informed, not so much perhaps from objection to the payment in and of itself as to the supposed questionable character of the whole arrangement with reference to congressional legislation against railway combinations.

A suggestion has consequently been made to the department that the railway distribution bureau at Ellis Island might, advantageously to all concerned, be taken over by the Department of Labor as part of the Immigration Service, under such cooperation with the Interstate Commerce Commission as may be feasible, the railroads, however, to continue to operate and financially to support the bureau as a voluntary affair, but payments of commissions to steamship lines

to be discontinued. The subject is now under consideration by the Interstate Commerce Commission and this department. Meanwhile, the situation is here called to the attention of Congress, in anticipation of such requests for legislative action as may possibly be needed.

Upon further investigation in cooperation with the Interstate Commerce Commission the department came to the following conclusions: (1) That abolition of the railroad clearing house at Ellis Island without the establishment of an efficient substitute would probably be detrimental to the Immigration Service there and expose admitted immigrants to fraudulent practices and unnecessary hardships; (2) that for this and other reasons the Department of Labor should not interfere with the clearing house in its present system of operations unless the system be unlawful, or until an efficient substitute can be established; (3) that the lawfulness of the system in so far as it depends upon the payment of commissions by the associated railroads to steamship companies for immigrant business has been sustained by the Interstate Commerce Commission in decision No. 622, and that the question of the lawfulness of the joint agency arrangement, which underlies what is commonly called the clearing house, is one over which this department has no jurisdiction other than its power to permit or forbid the system in the immigration station which it administers; (4) and that the department therefore exhausts its authority with reference to the legal question involved when it provides in its contract with the railroads a condition that the joint agency therein permitted shall not be in violation of law.

TRACHOMA.

In cooperation with the Surgeon General of the Public Health Service, the Department of Labor began in the early part of the fiscal year 1914 a series of observations of immigrant cases of trachoma, the general character of which was explained in my first report, as follows:

A contagious and dreadful disease of the inner surface of the eyelids which has prevailed in Egypt and Asia for centuries, but was unknown to western peoples until the soldiers of Napoleon Bonaparte returning from Egypt introduced it in Europe, trachoma is one of the most familiar of the diseases which necessitate exclusion of aliens from the United States. Regarded as exceedingly difficult to cure and requiring long treatment in isolation from unaffected persons, it has been almost uniformly a specific cause not only of exclusion but of denial of petitions for hospital treatment.

At one of the immigrant stations, however (the Philadelphia station, located at Gloucester City, N. J.), the medical certificates of the Public Health Service have from time to time declared, as to immigrants affected with this disease and landing there, that their cases were curable within a few weeks if the "grattage" operation (about which there is much doubt among distinguished oculists) were performed. One of these certificates having come to the attention of the department upon a petition for hospital treatment under section

37 of the immigration laws, presented by the husband and father (a declarant for American citizenship) of a Syrian woman and her minor child, the department granted his petition.

Section 37 of the immigration laws provides that when the wife or minor child of a permanent resident of the United States, who is also a declarant for citizenship, shall have been sent for by him to join him, and upon arrival they are found to have any contagious disorder, they shall be held "until it shall be determined whether the disorder will be easily curable, or whether they can be admitted to land without danger to other persons." The same section further provides that "they shall not be either admitted or deported until such facts have been ascertained; and if it shall be determined that the disorder is easily curable or that they can be permitted to land without danger to other persons, they shall, if otherwise admissible, thereupon be admitted."

There is another provision (section 19 of the immigration laws) which also makes the question of the ease or difficulty of curing trachoma an important one for the exercise of some of the discretionary powers of the Secretary of Labor under the immigration laws. This provision is to the effect that no alien certified by the medical officers of the United States Public Health Service "to be suffering from tuberculosis or from a loathsome or dangerous contagious disease other than one of quarantinable nature, shall be permitted to land for medical treatment thereof in any hospital in the United States, unless with the express permission of the Secretary of Labor." Aliens coming under this section have also been certified from the Philadelphia station, at Gloucester City, N. J., by the Public Health Service there as having trachoma which could be cured within a few weeks.

In harmony, therefore, with the action of the department under section 37 in the particular case mentioned above, the department has admitted to hospital treatment several cases, some of them arising under this section and some under the other. In doing so, it has acted in amicable cooperation with the Surgeon General of the Public Health Service, who has been kept informed of each case as it has arisen and of the disposition thereof.

Under that arrangement six aliens reported as having arrived at the immigrant station mentioned above and as being afflicted with trachoma, have been admitted to hospital treatment in the Medico-Chirurgical Hospital in Philadelphia, where they have undergone, of their own volition, the "grattage" operation. All these cases were duly reported by a board of three medical officers of the Public Health Service as having been cured within about four weeks after operation and as being free from contagion.

Continuing, however, to act in cooperation with the Surgeon General of the Public Health Service, this department arranged with the aliens aforesaid for such observation from time to time during the six months following their discharge from the hospital as the Surgeon General required, the fear in the Health Service being that the disease may recur. The experimental test in these cases will be complete under the arrangements of the department with the Surgeon General in the latter part of May, 1914. The department will then be better able to judge whether or not trachoma is

an easily curable disease within the meaning of section 37 of the immigration laws and the spirit of the policy of the department in exercising discretion under section 19. In this connection it should be said, however, that the action in these cases has been experimental only and not for the purpose of altering the present prudent policy of the department.

The observation period for trachoma tests (including those described above) having been subsequently extended from six months to one year, no tests are yet complete. This extension was made at the suggestion of the Surgeon General, who, while explaining that a year is arbitrary as a period of observation, advised the department that if the disease does not recur in that time there is little probability that it will ever do so. Of the six patients mentioned above as having been cured within about four weeks after operation and as being free from contagion, recurrence of the disease had at the end of the six months' observation period—May 9, 1914—been reported in one case.

ALIEN WOMEN.

The Commissioner General refers in his report to the appointment by the department, at his recommendation, of Mrs. Kate Waller Barrett, M. D., D. Sc., president of the National Council of Women and of the National Florence Crittenton Mission, as a representative of the Bureau of Immigration at the quinquennial session of the Council of Women held in Rome May 5 to 21, 1914. Mrs. Barrett was also to confer with European organizations of women similar to those over which she presides in this country. Her appointment and services have resulted in a report of a constructive nature, on the basis of which the Commissioner General recommends changes in the methods of handling cases of alien women and girls excluded or expelled from the country. The purpose is to insure kindly conduct of such cases, avoidance as far as possible of incarceration in jails or similar places, and deportation at times and under circumstances making it possible to provide for personal care under proper influences at the foreign ports of debarkation.

IMMIGRATION FROM INSULAR UNITED STATES.

Statistics on this subject have been compiled regularly, but are published for the first time in the Commissioner General's report for the last fiscal year. They show that during seven years 15,512 aliens came to continental United States from insular United States—10,948 from Hawaii, 3,950 from Porto Rico, and 614 from the Philippines—and that of these 10,740 landed at San Francisco, 3,910 at New York, and 631 at Seattle. Of the 15,512 shown to have come to the mainland from the insular territory, 8,867 gave their final destination as California and 2,360 as New York.

DIVISION OF INFORMATION.

For the purpose of promoting a beneficial distribution of aliens admitted into the United States, Congress has authorized a Division of Information in the Bureau of Immigration and under the direction and control of the Secretary of Labor. The duties of this division, which are prescribed by section 40 of the immigration act, are, among other things, to gather and publish useful information regarding the resources, products, and physical characteristics of each State and Territory and to deliver its publications to admitted aliens and other persons who may desire such information.

There should, of course, be no perversion of the purpose of this law to the prejudice of American wageworkers by directing or attracting aliens to places already supplied in excess of opportunities for profitable employment, and such uses of the law it is the policy of the department to avoid and prevent. Not only would it be contrary to the intention of the statute creating the Division of Information—the distribution of aliens which it contemplates being expressly declared therein to be beneficial—but such perversions would stultify the fundamental purpose of the Department of Labor, which is defined by its organic act to be to “foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment.” Nor is any perversion or stultification necessary to the performance of the duties prescribed. As suggested in my first annual report, “it ought to be feasible to organize this division in such manner as to make it useful in high degree alike to immigrants seeking employment, to employers in legitimate need of fairly paid wage earners, and to the whole body of the wage earners of the United States.”

Fully to accomplish this object the powers of the Division of Information need little legislative expansion beyond an express inclusion of American wage earners in the contemplated beneficial distribution. The necessity of even such an amendment may be questioned. For, taking the prescribed powers of the Division of Information into consideration with the prescribed purpose of the Department of Labor, of which that division has since its own creation been made a part, very much can doubtless be done by the department through this division in the direction of promoting the welfare of wage earners, citizens as well as aliens, which might not have been lawfully done before the creation of the Department of Labor. So much in that direction as can properly be done without further legislation, the Department of Labor is utilizing the facilities of the Division of Information to accomplish. Consequently

this division, since its transfer to the Department of Labor, has entered a wider field of work, the character of which is described earlier in this report.¹

BUREAU OF NATURALIZATION.

This bureau originated in an extension of the authority of the former Bureau of Immigration, which by act of Congress approved June 29, 1906, was named "Bureau of Immigration and Naturalization" and given charge, under the direction and control of the Secretary of Commerce and Labor (in whose department it was continued) of all matters concerning the naturalization of aliens. While the Bureau of Immigration and Naturalization remained in the Department of Commerce and Labor it supervised the execution of the naturalization laws through a nonstatutory division organized within it for convenience of administration and known as the "Division of Naturalization," but in transferring that bureau to the jurisdiction and supervision of the Department of Labor the organic act of the department divided it into a "Bureau of Immigration" and a "Bureau of Naturalization." The Bureau of Naturalization, therefore, although the youngest bureau of the department by statutory creation, comes next in order to the Bureau of Immigration in distinctive service.

Prior to the act of Congress cited above, that of June 29, 1906, there was no concentrated supervision of naturalization proceedings nor any centralized record of naturalization. Frauds were consequently prevalent, and evidence of admissions, rejections, and non-application was often difficult to secure. Some of the inconveniences of that chaotic condition come to the surface occasionally now upon requests for proof or disproof of naturalization proceedings prior to September 27, 1906. As to all proceedings after the act of 1906 went into operation, the records of the Bureau of Naturalization are complete. Whether any alien has since that time made a declaration of intention or not, or been naturalized or not, and no matter in which of the 2,527 courts over the whole United States that have been or now are doing naturalizing work, the fact can be conclusively and easily proved by reference to these records. And over the proceedings themselves the Bureau of Naturalization maintains continuous scrutiny. It investigates the circumstances of each application and submits to the courts on their respective naturalization days such evidence as it is able to discover relative to the merits of cases then to be decided.

¹ See "Office of the Secretary," subtitle "Distribution of wage earners," p. 50.

For this purpose the country is districted with reference to the volume of naturalization business and its distribution. There are in all 11 naturalization districts. The largest by volume of business, though next to the smallest territorially, has its headquarters at New York City. It comprises most of the State of New York east of Auburn and includes Jersey City, N. J. The largest district territorially, though among the smaller in volume of business, has its headquarters at Washington, D. C., and comprises eastern Maryland, the District of Columbia, Virginia, North and South Carolina, Georgia, Alabama, Kentucky, Tennessee, Florida, Mississippi, Louisiana, and Texas. Headquarters of the rest of the 11 districts, respectively, are at Boston, Philadelphia, Pittsburgh, Chicago, St. Louis, St. Paul, Denver, Seattle, and San Francisco.

OPERATIONS FOR THE FISCAL YEAR 1914.

INCREASE OF NATURALIZATION WORK.

In comparison with the previous fiscal year the naturalization work for the fiscal year herein reported upon, the first full year of the bureau in this department, has considerably increased, as appears in greater detail in the official report of the bureau itself, to which attention is called. There were filed in the clerks' offices of the courts 214,016 declarations of intention as against 181,632 in 1913, an increase of 32,384 in number and 17.83 in percentage. Of second papers, or petitions for naturalization, there were filed 123,855, an increase over the number last year of 28,669, or 30.12 per cent; and of certificates of naturalization there were issued 102,558, which is an increase of 20,541, or 25.04 per cent.

Examination of these papers has largely augmented the supervisory work of the bureau, and their increase has largely expanded its correspondence. On an average for each working day of the year the correspondence alone required attention to 523 pieces of incoming mail, an increase over last year's record of 82 pieces per day, or 18 per cent, and to 791 pieces of outgoing mail, an increase of 192 pieces, or 32 per cent. As a result of the larger number of petitions filed there has been also during the year a marked growth in the number of certificates of alien arrivals and of verifications of their landing which the bureau has supplied.

As an unavoidable result of the figures given, the bureau has not only been unable to reduce the arrearages of work reported a year ago, but those arrearages have increased. This condition calls for enlargement of its clerical force sufficient to enable it not only to keep up with the current work, which will probably continue to increase still further, but to dispose of that which has accumulated.

CLERKS OF COURTS.

At the close of the fiscal year 2,380 courts were still acting as naturalization courts. One clerk for each represents the minimum number of clerks of courts under the supervision of the bureau. Besides these, however, clerical assistants to the number of 47 were allowed to certain court clerks as provided in the sundry civil appropriation act, their salaries for the year aggregating \$52,129.65. With this allowance the minimum number of these officers was 2,427. There were probably other assistants paid by the clerks out of one-half of the fees, which proportion (not in excess of \$3,000) they are allowed to retain, but of these there is no available record.

COURTS.

Of the 2,380 naturalization courts, 203 are Federal and 2,177 are State courts. These figures represent an increase of two Federal courts as compared with the number reported last year and a decrease of 61 State courts.

The total number of petitions disposed of by the courts during the year was 118,572, of which 105,439 resulted in the granting of certificates of naturalization and 13,133 in denials upon various grounds affecting either the character of the petitioners or their compliance with the requirements of the law.

The discrepancy between the number of certificates reported as issued (102,558) and the number granted (105,439) is due to delay by clerks of courts in the transmittal of duplicate certificates to the bureau under section 12 of the act of June 29, 1906.

The courts during the year have canceled, upon grounds of illegality, 319 certificates of naturalization. Under the penal provisions of the law there have been 35 convictions. Of the persons convicted 5 were fined, 15 were sentenced to jail, 3 were subjected to both fine and imprisonment, and 12 were discharged under suspension of sentence. In 8 cases a nolle pros was entered and 8 resulted in acquittals.

FIELD SERVICE.

The field officers of the bureau, consisting of 11 chief examiners, 48 examiners, and 14 clerks, have—besides conducting their correspondence with the office in Washington, reporting on applications for new naturalization papers in lieu of those claimed to have been lost or destroyed, and consulting with United States attorneys in regard to instituting cancellation proceedings or invoking the process of the penal provisions of the law for frauds—examined in the clerks' offices 112,259 petitions and 112,001 declarations. They have also personally investigated, prior to hearings in court, 87,840 petitioners and

169,050 witnesses and have made similar inquiry by correspondence of 24,488 petitioners and 49,856 witnesses.

They have also personally attended and represented the Government at 4,015 hearings in the courts and have sent written reports for use at 2,053 hearings, at many of which a great number of cases was disposed of. During the year 863 aliens were admitted to citizenship contrary to the recommendations of the examiners, and 104,314 were admitted in conformity with their recommendations.

In only 194 cases out of a total of thousands was there no attendance of the examiners either in person or by correspondence.

These officers also made 8,690 personal visits to offices of clerks of courts in connection with preparation of the records by the latter, settlement of their accounts, remittance of duplicate papers to the bureau, etc.

This work of the examiners involved a total travel during the year of 599,293 miles, at a total cost of but \$12,513.74—only slightly more than 2 cents a mile for all expenses—a saving due to use of mileage books and traveler's scrip.

FINANCIAL.

The total receipts from fees for the fiscal year were \$450,228.55, being \$99,511.95 in excess of the amount received last year. The total expenditures for the service during the year were \$331,517.26, which was about \$40,000 more than the service cost last year. The net balance of receipts from the service over its expenses is \$118,711.29.

Taking the figures for the entire period since the service was organized, and allowing for the deficits of \$88,080.47 prior to the transfer of the field service to the control of the bureau, the total net profits to the Government are \$320,914.15. Disbursements are made, it should be explained, not from receipts but from specific appropriations made by Congress.

For the fiscal year 1914 the disbursements were from appropriations of \$72,362.07 in the legislative act and \$224,137.78 in the sundry civil act, the remainder being from the contingent fund and printing allotment appropriated to the Department of Labor.

CONGESTION AT PHILADELPHIA.

At the beginning of the fiscal year a persistent and increasing accumulation of naturalization cases at Philadelphia seemed hopeless without some radical change in the conditions there. Approximately 5,000 applications to file petitions for naturalization had been made during the previous fiscal year; yet only 2,860 petitions were filed and some 1,700 cases heard. Ten months later the number of applicants awaiting their turn to file petitions had increased to about 5,400 and the number of petitioners awaiting their turn to be heard

in court had risen on the face of the record to about 3,700. Inasmuch, however, as about 200 of the latter were in default and the cases of about 730 were not yet ripe for hearing under the law (the statutory period of 90 days after petition filed not having expired), the true number of petitioners awaiting a hearing was nearly 1,000 less than the 3,700 which appeared upon the face of the record. On the 12th of May, 1914, therefore, the congestion approximated 5,400 applicants awaiting their turn to file petitions and 2,730 awaiting their hearings. This condition did not appear to be the fault of the Bureau of Naturalization. It may be attributed largely to the fact that all naturalizing business at Philadelphia had been done by the Federal court alone and that most of the work of this court had by untoward circumstances been cast for a considerable time upon one judge. The appointment of an additional judge brought a measure of relief, but not enough to give assurance that the congestion could be dissipated within a reasonable time.

In that emergency the committee of common pleas judges at Philadelphia responded favorably and graciously to a request by the Secretary of Labor that under the pressing circumstances their court recede, temporarily if not permanently, from its established practice of refusing jurisdiction in naturalization cases. Accordingly the court of quarter sessions at Philadelphia has come to the assistance of the Federal courts in naturalization matters.

It began receiving declarations of intention and petitions for naturalization July 15, 1914, and on the 31st of August 740 declarations and 386 petitions had been filed with the clerk of the court. As 90 days must elapse between the filing of a petition and a hearing upon it in court, the hearings at quarter sessions could not begin until the middle or latter part of October of the present calendar year. But by thus accepting jurisdiction under the naturalization laws of Congress, as more than two-thirds of the other State courts in the United States have done, the court of quarter sessions at Philadelphia has made it possible for the Federal court to effect an early clearance of its accumulated naturalization cases, to the gratification of the Department of Labor and the satisfaction, no doubt, of all persons eligible for naturalization whose rights in that respect would otherwise be unreasonably delayed.

CONGESTION AT NEWARK, N. J.

A congestion in the naturalization service at Newark, N. J. (in the Philadelphia district), came to the attention of the department in connection with the similar difficulty at Philadelphia. In the Newark affair, however, the congestion was in the State courts instead of the Federal, and was due to temporarily inadequate facilities in the Federal court for transacting its full share of this business. The

cause having been removed through the courteous intervention of the Department of Justice at the request of the Secretary of Labor, the congestion at Newark is at an end.

CHILDREN'S BUREAU.

Created by act of April 9, 1912, and operating in the Department of Commerce and Labor until March 4, 1913, the Children's Bureau, like the other bureaus transferred to this department by its organic act, has been under the jurisdiction and supervision of the Department of Labor since the latter date; and as with the other bureaus, the present is the first full fiscal year of its work in this department. For a better understanding of the work of this bureau its own official reports should be consulted.

OPERATIONS.

Until after the close of the fiscal year the bureau operated with the same limited staff, 15 persons, and with the same insufficient appropriations, \$25,640 a year, with which its operations began: but after the fiscal year had closed, provisions of the legislative, executive, and judicial appropriation act approved July 16, 1914, authorized an increase in the staff to 76 persons and in the appropriations to \$164,640. Although this concession will greatly improve and extend the operations of the bureau during the fiscal year to end June 30, 1915, the limitations of so small a staff as 15 persons and so small an appropriation as \$25,640 must be taken into account with reference to all its operations for the fiscal year now under consideration.

The field of the Children's Bureau is defined by law as the investigation of all matters pertaining to the welfare of children and child life, the following particulars being especially stated: Infant mortality, the birth rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment, and legislation affecting children.

INFANT MORTALITY.

The inquiry into infant mortality described in my first annual report has been continued. Of the series of studies then planned, to include in time typical localities throughout the country and to furnish comparable data as to the extent and significance of infant mortality in the United States, the first has been completed and others are under way. The completed report shows a coincidence of underpaid fathers, overworked and ignorant mothers, and those hazards to the life of their offspring which individual parents can not avoid or control. All this points toward the necessity for ascer-

taining a normal standard of life for the American family, to which it is hoped that the bureau's continued studies into infant mortality may contribute by accumulating data that will give a reasonable measure of the civic, social, and economic circumstances surrounding American-born infants.

Profiting by its experience with the first study in infant mortality, the bureau has modified its schedule in certain respects for its next field studies. The essentials, however, are retained, and all the studies will present comparable data. It is the purpose increasingly to study conditions under civic or local control and to cooperate in every practicable manner with individual communities. Thus in Johnstown, Pa., the first city studied, an examination of the milk supply was made by the Federal Bureau of Animal Industry at the joint request of the Children's Bureau and the Johnstown authorities. A vigorous citizens' campaign for a properly controlled milk supply followed this examination, reenforced by a 10-day infant-welfare exhibit, weekly clinics for mothers, and the employing of an infant-welfare nurse for the summer months.

Certain pamphlets bearing on the subject of infant mortality have been published by the Children's Bureau during the past year, one of these being a description of the methods of the New Zealand Society for the Health of Women and Children. In spite of New Zealand's scattered population, that country has for many years secured accurate birth registration and has reduced its infant mortality to the lowest record in the world. The methods of the society are simple. Local committees of citizens are formed, nurses secured for certain defined districts, instruction and actual care given as may be required, and popular literature provided through pamphlets and through the newspaper press. It is believed that the methods of this society should be suggestive for infant work in our own country outside the great urban centers.

A second pamphlet in the series of publications dealing with the care of children will be issued shortly. This is entitled "Infant Care." It discusses the care of the child to the end of the second year and is addressed to the average mother of this country. There is no attempt to invade the field of the medical or nursing professions, but rather to furnish such information regarding hygiene and normal living as every mother has a right to possess in the interest of herself and her children.

BIRTH REGISTRATION.

The bureau has continued its efforts to popularize a knowledge of the value of birth registration, and, in cooperation with the Census Bureau and various women's organizations, notably the General Federation of Women's Clubs, has continued the inquiry undertaken

last year into the completeness of birth registration in various States. In the course of the investigation so far the bureau has been in correspondence with 1,500 individual club women in 17 States, who have furnished it the birth records of more than 3,400 babies from representative population groups. Of this number, over 700 babies, or more than a fifth, were not registered.

Although there is now no State without some legal provision for recording births, many of the laws are still defective. At least 16 States need new laws or substantial amendments in order to meet the standards of the Census Bureau, and there is no State in which public interest is yet strong enough to secure complete registration.

For use in conducting popular campaigns for better birth registration, a revised edition of the bulletin on this subject has been issued which shows a growing agitation for securing good laws and an increasing use by State and city health officers of all available methods for stimulating public interest.

CHILD LABOR.

The subject of child labor has been especially considered with reference to the administration of child-labor laws. The bureau's study of the methods of securing employment certificates began with a technical investigation of the laws and local regulations and the actual practice followed in certain States. It has been expanded into an intensive field investigation of the entire administration of child-labor laws in those States. Reports upon three States—Connecticut, Massachusetts, and Maryland—are practically completed. The field work for the State of New York is nearly completed and the report partly written. In Wisconsin and Minnesota preliminary studies have been made. The Wisconsin system, at least, will be thoroughly investigated; but the plan is to include both Ohio and Illinois, and also any other States which may seem to be representative of special methods of administration. Since the practical effectiveness of child-labor legislation depends largely upon methods of enforcement, and since the systems of issuing employment certificates differ widely in different States, this subject has been found particularly fruitful.

MOTHERS' PENSIONS.

The growth of so-called mothers' pension laws has been marked. Within a period of two years (since 1911) 21 States have passed laws which, though varying in method, are admittedly uniform in purpose, namely, to secure for young children home life and the personal care of a good mother. In view of the immediate legislative importance of the matter, the bureau has brought together the

texts of the laws thus far enacted, together with available information as to their operation and a list of references to current discussions. The New Zealand and Denmark laws have been added for purposes of comparison.

JUVENILE COURTS.

The creation of the juvenile-court system 15 years ago marked a change in the public view of the problems of dependency, delinquency, and mental defect. It has become increasingly evident that the needs of the children concerned can not be met by punishment or by institutions alone; that a high quality of judicial training and of human understanding is required in the juvenile-court judge; that the ablest judge is helpless without adequate juvenile-court equipment; and that the largest city in a State may be well provided for, while in remote counties of the same State every expedient for helping the child may be lacking.

Correspondence has been started by the bureau preliminary to a study of the best methods of securing an equitable enforcement of juvenile-court laws in accordance with the constitutional provisions of individual States. Following this correspondence a questionnaire is to be used to develop in detail the variations in equipment and administration of juvenile courts apparently operating under the same law; and on the basis of the questionnaire, an intensive study into the administration of a few typical courts will be undertaken within some restricted area.

In March of the present year a committee was appointed by the Attorney General of the United States to "take under consideration the question of the amendment, revision, and codification of the laws in force in the District of Columbia pertaining to children and to the jurisdiction, practice, and procedure of the juvenile court of the District." The members are Bernard Flexner (chairman), William H. Baldwin, Walter C. Clephane, Rev. William J. Kerby, and Julia C. Lathrop (Chief of the Children's Bureau). The work of this committee in preparing a draft of a juvenile-court law for the District is now nearly complete.

FEEBLE-MINDEDNESS.

The President of the United States having addressed a letter to the Bureau of Education and to the Children's Bureau directing their joint consideration of the problem of the feeble-minded with a view to presenting a plan of inquiry, both bureaus are now engaged in the preliminary work.

At the request of a civic organization of the District of Columbia which includes in its membership representatives of various institutions and official bodies engaged in child-welfare work, the Children's

Bureau has undertaken to prepare a report on the known feeble-minded children in the District.

There are no institutions in the District for the care of such children, and they are boarded in institutions in near-by States or in the Government Hospital for the Insane or in private families. To some extent they are found also in the public schools and in District institutions for normal children. It is believed that there exists a large number of such children and young people in the District of Columbia who are unprotected and whose presence in the community is a menace to themselves and to the public.

In view of the relation of feeble-mindedness to dependency on the one hand and to delinquency on the other—to prostitution and illegitimacy—this is a problem of grave importance and difficulty. It would seem highly desirable that the District of Columbia should be adequately equipped for the humane care of the various classes of the mentally deficient. Such a report should furnish a basis for estimating the extent of equipment necessary.

RECREATION.

Recreation is now universally recognized as one of the important subjects in any program for the welfare of children. The provision of play spaces is assumed as a municipal responsibility by more than 300 American cities. All the recreational facilities of a community need to be studied with the same eye to the future with which school-houses are provided; and during the coming year the bureau purposes beginning studies into methods of community recreation and of safeguarding commercial recreation.

EXHIBITS.

The bureau aided in preparing a child-welfare exhibit for the National Conservation Exposition held in Knoxville, Tenn., during September and October, 1913. Various children's agencies and associations sent exhibits of their work, and much of the material was shown later in other cities of the South and Middle West. One of the main features of the exhibit was a children's health conference to which parents brought their children for examination by a specialist. No competitive score was used for this conference, but a printed sheet was filled out for parents showing the condition of each child in regard to the most important points of development.

Requests for assistance in preparing child-welfare exhibits have suggested the desirability of adding to the staff of the bureau an exhibit expert, and under the increased appropriation for the fiscal year 1915 this is to be done. The first work of the exhibit expert will be the preparation of an exhibit for the Panama-Pacific International Exposition.

LIBRARY AND INFORMATION SERVICE.

One of the urgent needs of the bureau is a central office for collecting and reviewing the important facts of child life throughout the civilized world, particularly those with reference to the various methods of dealing with children in the States of this country through civic and volunteer organizations. Requests for information of this kind are from many sources and of great variety. They come from individual mothers, from groups of citizens trying to establish local playgrounds or to secure juvenile courts or to reorganize a State system of caring for dependent and delinquent children. Foreign Governments also make inquiries along these lines, asking about legislation or new social methods found effective in bettering the circumstances of child life in the United States. A constant stream of inquiry about children gives daily evidence of the need in the bureau for some such central assembling agency of child-life information as is indicated above, and to meet and satisfy this need through the Children's Bureau is one of the expectations of the department.

Its original policy has been pursued by the bureau with regard to preparing popular literature addressed to individual mothers. These publications are represented by the Care of Children series, by the reports on Baby-Saving Campaigns and Birth Registration, and by those on the New Zealand Society for the Health of Women and Children.

The limitations of the printing fund have made it impossible to comply with requests to send out these pamphlets in quantity for distribution, but all individual requests are honored. In the case of fairs, conferences, hospital clinics, and the like, for which pamphlets may be needed in quantity, a plan has been devised for sending out a limited number as samples, blank lists being forwarded with them for addresses to be filled in and returned to the bureau; single pamphlets are then mailed direct from Washington to the individual addresses.

Following is a list of the publications prepared during the last year:

A report of the first field study of the Children's Bureau, entitled "Infant Mortality: Results of a field study in Johnstown, Pa., based on births in one calendar year." By Emma Duke.

A bulletin entitled "New Zealand Society for the Health of Women and Children," describing the methods of that society in work for infant welfare. By Mrs. Etta R. Goodwin.

A second pamphlet in the series on the Care of Children, entitled "Infant Care." By Mrs. Max West.

A revised edition of the first bureau pamphlet on birth registration, entitled "Birth Registration: An aid in protecting the lives and rights of children."

A bulletin entitled "Child Labor Legislation in the United States," being a compilation of the texts of the various laws. By Helen L. Sumner and Ella A. Merritt.

A bulletin entitled "Administration of Child Labor Laws in Connecticut." By Helen L. Sumner and Ethel E. Hanks.

A bulletin entitled "Administration of Child Labor Laws in Maryland." By Helen L. Sumner, Ethel E. Hanks, and Arthur V. Parsons.

A bulletin entitled "Administration of Child Labor Laws in Massachusetts." By Helen L. Sumner and Arthur V. Parsons.

A bulletin entitled "Laws Relating to Mothers' Pensions in the United States, Denmark, and New Zealand," being a compilation of the texts of the various laws. By Laura A. Thompson.

DEPARTMENTAL RECOMMENDATIONS.

For the department to advance any farther in the direction of the purposes for which it was created than Congress permits it to go, is of course impossible. It is equally impossible to carry its work to the limits of congressional permission with satisfactory results except as it has congressional cooperation. The Secretary of Labor therefore acknowledges with gratification that congressional restrictions upon or indifference to the department's work do not now appear to exist. With prescribed purposes broad enough in general outline, its powers are adequate, or nearly so, for all present undertakings; and in every particular to which the attention of Congress has been secured the needs of the department have had sympathetic consideration. As is natural with a department so recently established, its principal needs have been financial; and Congress, while slower to act than the department has wished and as its earlier necessities seemed to require, has been so well disposed in that respect as to obviate the necessity of pressing for any very considerable increase of appropriations for the fiscal year 1916.

ESTIMATES FOR THE FISCAL YEAR 1916.

With reference to the estimates for the year 1916 it is important to call attention to the fact that some of the work of the department brings into the Treasury annually a much larger sum than the department asks for all its expenses. In elaboration of this statement reference is made to that part of the present report which, dealing with the work of the disbursing clerk, is entitled "A significant contrast." As there appears, the receipts of the department for the year

ending June 30, 1914, were \$5,676,074.82, while the expenditures were only \$3,890,235.96. The balance, therefore, of receipts through the department for part of its work in excess of its entire expenditures was \$1,785,838.86.

To avoid misapprehension it should be observed that these receipts are not in the nature of a general tax of which the department might be regarded as the collector. Almost altogether they are receipts in the nature of fees for supervising the immigration and the naturalization of aliens. As the total estimates of the department for the fiscal year 1916 amount to only \$4,590,210, these estimates are less by \$1,085,864.82 than the receipts for the year 1914. If the department's receipts for the year 1916 should prove to be the same as those for the year 1914, the following comparison of receipts and estimates would result:

Receipts -----	\$5, 676, 074. 82
Estimates -----	4, 590, 210. 00

Excess of probable receipts over estimated appropriations ¹ -	1, 085, 864. 82
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If, however, the European war were to continue into and through a considerable part of the fiscal year 1916, there would be a large decrease in receipts for that year in consequence of comparatively small immigration.

Since, then, the fees which the department receives from aliens for admission and for naturalization cost the Government nothing for collection, but on the contrary, after what the department asks for its entire administration is deducted from them, their collection included, there is left a probable surplus of more than a million dollars a year, the Secretary respectfully submits that the recommended estimates should be received with favor upon the double consideration of their intrinsic merit and the self-supporting character of the department's work.

OFFICE OF THE SECRETARY.

Until May 1, 1913, a period of nearly two months after its creation, the Department of Labor was without any appropriations at all. On that date, however, appropriations were made for the statutory salaries of the Secretary of Labor and other statutory officials of the Office of the Secretary, together with salaries for two private secretaries and one confidential clerk, the aggregate being \$7,066.66 to June 30, 1913, and \$29,400 for the succeeding fiscal year.

Under this restricted allowance, and by means of detailing from the bureaus employees who had been transferred to them from the Department of Commerce, the work of the Office of the Secretary in the Department of Labor was managed until October 22, 1913. The urgent deficiency act for the fiscal year 1913 made such addi-

tional appropriations on that date as to provide for a chief of division and two clerks in the division of publications and supplies, one clerk to assist the chief clerk, one clerk in charge of appointments, one clerk to assist the disbursing clerk, one telephone switchboard operator, and one laboree, and for a maximum contingent allowance of \$10,000 (all for the accommodation of the entire department, bureaus included), besides providing a rental of \$5,000 for the accommodation of the Office of the Secretary and all the rest of the department except the Bureau of Labor Statistics, and for two messengers for the Office of the Secretary distinctively. The same act appropriated \$5,000 for the expenses of commissioners of conciliation in labor disputes, though nothing for their salaries—the first appropriation of any kind for mediation purposes.

About six months later the urgent deficiency act for the fiscal year 1914, approved April 6, 1914, appropriated a maximum of \$20,000 for salaries of commissioners of conciliation, at a rate not to exceed \$10 per day to each commissioner while actually employed in labor disputes, and \$30,000 for printing and binding.

In addition to the appropriations above mentioned the Department of Commerce, in accordance with the provisions of the act of May 1, 1913, transferred to this department the following amounts: \$3,013.38 for salaries, \$12,228.10 for contingent expenses, and \$35,047.40 for printing and binding for the balance of the year 1913, and \$24,397.50 for salaries, \$26,100 for contingent expenses, and \$84,000 for printing and binding for the year 1914.

The foregoing statement gives in full the financial equipment of the Office of the Secretary, much of it being for general purposes of the entire department, including the bureaus—such as printing and binding, furnishing supplies, elevator and telephone service, light, heat, etc.—from the time of the creation of the department, March 4, 1913, to the close of the fiscal year 1914, a period of nearly 16 months.

No further appropriations for the Department of Labor were made until July 16, 1914, when the legislative, executive, and judicial appropriation act for the fiscal year 1915 was approved. These appropriations allowed the Office of the Secretary for all purposes, inclusive of general departmental purposes such as are noted above, an aggregate of \$36,100 for contingent expenses, \$86,740 for general salaries, and \$115,000 for printing and binding, in addition to \$50,000 for the salaries and expenses of commissioners of conciliation (including an executive clerk) and \$16,500 for rent. The rental appropriation in this bill, like that for the year 1914, is for the housing of the entire department, bureaus and all. The appropriations, therefore, for the fiscal year 1915 for the Office of the Secretary, inclusive of all such accommodations and services as the bureaus in

the department derive through the Office of the Secretary, amount in the aggregate to \$304,340.

This amount is exceeded in the estimates for 1916 by less than \$83,000, as may be seen from the following tabular comparison:

Purpose.	Appropriations for 1915.	Estimates for 1916.
Salaries.....	\$86,740	\$101,560
Contingent ¹	36,100	37,500
Rent ¹	16,500	26,000
Printing and binding ¹	115,000	147,000
Conciliation.....	50,000	75,000
	304,340	387,060
Increase asked for.....		82,720

¹ For the entire department, including bureaus.

The increases are, as the table shows, an additional allowance for salaries of \$14,820, for contingent expenses of \$1,400, for rent of \$9,500, for printing and binding of \$32,000, and for conciliation purposes of \$25,000.

As to the salary increase of \$14,820, this is accounted for by the following extremely necessary additions to the working force:

2 clerks of class 4.....	\$3,600
3 clerks of class 3.....	4,800
1 clerk of class 1.....	1,200
2 clerks, at \$900 each.....	1,800
1 assistant messenger.....	720
2 laborers, at \$660 each.....	1,320
1 chief watchman.....	900
1 forewoman of char force.....	480
Total.....	14,820

The increased rental item of \$9,500 is necessitated by the circumstances explained in the present report in connection with the functions of the chief clerk under the title "Department quarters." The Department of Labor and all its bureaus are quartered in the Mills Building under a lease for the whole building except the southeast corner on the ground floor, and this lease expires June 30, 1915. These quarters were secured for that term at the low allowance which Congress had appropriated, namely, \$16,500. A renewal on the same terms is improbable, the building having been occupied until a year before the present lease at a rental of \$30,000, and being now assessed for taxation at \$260,000 for structure and \$80,627 for site. Inasmuch as completion of a Government building for the accommodation of the Department of Labor in less than five years is unlikely, and as the department has within less than two years been twice compelled to undergo expensive and disturbing removals, it would seem to be

in the interest of economy to authorize a five years' lease for some appropriate building at a reasonable rental.

For the work of conciliation in labor disputes the increase of \$25,000, making a total of \$75,000, is not more than enough as a maximum for work so fluctuating in volume. Unless needed, it will not be expended; and a smaller appropriation might seriously cripple mediation work. A service such as this, which has in so short a time saved millions of dollars to the industries of the country through mediation in labor disputes, can hardly be regarded as overfinanced with the moderate sum of \$75,000 for the fiscal year 1916.

BUREAU OF LABOR STATISTICS.

No increase is asked for this bureau in respect of salaries, field expenses, or library. A small increase, from \$3,000 to \$3,800, is needed for additional clerical help necessary in administering the act for compensating Government workmen or their families in injury cases. One of the estimates of this bureau is for \$25,000 to enable the bureau to comply with Senate resolution No. 68 (63d Cong., 2d sess.), which requires the Secretary of Labor to investigate and report upon the mortality and the disability, by accident or by disease, incident to or resulting from the various occupations in which the wage earners of the United States are engaged.

The only other item in the estimates of this bureau for 1916 in excess of the appropriations for 1915 is for the purpose of enabling the bureau to ascertain the facts as to industrial unemployment. For this purpose the sum of \$10,000 is a moderate expenditure, and the undertaking itself is too important to be discouraged. No information is more urgently needed for promoting the welfare of wage earners. It is further to be considered that the proposed investigation is not only for their welfare and that of their families, probably half the population, but is also in the interest of every other industrial class. Wage earners suffer directly from unemployment, being forced thereby to economize often to the point of distress; but there is no other industrial class which does not suffer, at least indirectly, from the unemployment of wage earners, for loss of wages means loss of purchasing power. This appropriation of \$10,000 is therefore asked and urgently recommended to enable the department to make an investigation into the facts of unemployment.

A small miscellaneous expense-deficiency appropriation (\$5,000) was made to this bureau during the year 1914, but it did not become available until too late to finish the investigations that were then under way. Although the field work had been put into good shape and the tabulations of returns were for the most part nearer to date than usual, not enough time was left after the deficiency appropriation for completing the revision and editorial work by the close

of the fiscal year. Lack of authority to employ sufficient clerical help in the office from appropriations available only for field work, and of funds for printing its reports, have caused such congestion as there is in the work of the bureau.

BUREAU OF IMMIGRATION.

Estimates for salaries in this bureau for 1916 are the same as the appropriations for 1915. A considerable increase, however, is estimated for the stations respectively at Ellis Island, Galveston, and Philadelphia, for which the reasons follow:

Ellis Island.—The station at Ellis Island should be provided with adequate detention and dormitory accommodations for detained cabin passengers, in order to minimize the hardships incident to custody pending final determination of right to land; and it is estimated that the necessary improvements will cost \$80,000. The floor in the main inspection hall is composed of an asphaltic composition, which has become so seamed and cracked with age that sanitary conditions are unfavorably affected. To replace this floor with tiling that may be kept clean by flushing will involve an expenditure of \$17,000. A new sea wall has been constructed on the northerly side of the main basin, replacing dilapidated cribwork. This permanent improvement, especially as the old plank decking (serving as a sidewalk for thousands of persons each year) has decayed and in some places is unsafe, should be supplemented with concrete walks of modern construction. It can be done if the estimated amount of \$20,000 is allowed. Several years ago Congress authorized a sea wall around the island, part of which has been built. To proceed with another section of the work an estimate of \$160,000 is recommended. The buildings for treatment of aliens with contagious diseases are located upon a separate island connected by a wooden gangway. This affords no protection from the weather, and it is proposed to replace it with a reinforced concrete structure designed to afford complete protection from exposure of patients on their way to the contagious-disease hospital. The work can be done for \$60,000. Closely allied with this improvement is the proposed grading of the island on which the contagious-disease hospital stands and the laying of concrete walks to facilitate communication between buildings. For these objects an estimate of \$5,000 is submitted. A large addition to the baggage and dormitory building has recently been completed, and the underground mains for transmitting heat and light to it should be placed in a pipe tunnel, the estimated cost of which would be \$4,000. The aggregate estimate for these improvements at Ellis Island is \$346,000.

Galveston.—The station at Galveston being upon an island without any established ferry communication, a vessel for ferry purposes

must be maintained by the Immigration Service. As attempts to meet the requirements with chartered vessels have not been satisfactory, none of them being well adapted to ferry purposes, the department requests an appropriation of \$25,000 for the purchase or construction of a suitable boat.

Philadelphia.—Although the station at Philadelphia is not upon an island, it is situated at Gloucester City, N. J., and the only satisfactory method of reaching the steamship wharves located along the many miles of water front is by the use of a boat adapted to the work required. As it is impracticable to charter proper equipment, an estimate of \$11,000 is made with a view to buying or building a suitable vessel.

Regulating immigration.—For regulating immigration a large increase over the appropriations for 1915 is asked. This is explained by two items which the department regards as especially worthy of consideration. The first involves regrading the subclerical employees of the Immigration Service, i. e., the watchmen, laborers, charwomen, janitors, etc. This class of help is underpaid, and the prospects of advancement are so slight that whole-hearted service is difficult to command at all times. The amount required to correct this condition is \$28,500. The second item going to make up the proposed increase for regulating immigration is \$250,000. This sum is for an extension of the work under those parts of the immigration laws which deal with immorality. The appropriation for the general enforcement of the statutes has been utilized as far as possible in sending out of the United States many aliens objectionable on moral grounds; but the field is large, and as the entire expense of arresting and deporting most of these people falls upon the Government instead of upon the steamship lines, a considerable increase in the appropriation is indispensable to efficient administration of the statutes authorizing deportations of aliens identified with the so-called "white-slave traffic."

Contract labor.—No other additions to the appropriations appear in the estimates of this bureau except an item of \$1,000 for information regarding importations of contract laborers. This appropriation, however, falls under the provisions of the contract-labor law permitting such compensation out of fines collected for violations of that law. The fines in this instance aggregated \$3,000.

Aggregate estimates.—As to the estimates for this bureau in the aggregate, it is to be observed that they amount to \$1,831,604.37 less than the receipts of the bureau for the fiscal year 1914.

BUREAU OF NATURALIZATION.

Growth of naturalization work having strained the capacity of this bureau with its present force, an increase of \$73,990 over the appropriation for 1915 is asked. Of this increase \$16,040 is for

additional clerical service (10 clerks and 1 messenger) and \$57,950 for field service.

The total estimate for 1916 is \$404,000, which is \$46,228.55 less than the receipts from naturalization fees that this bureau transmitted to the Treasury in the fiscal year 1914.

CHILDREN'S BUREAU.

No increase of appropriations for any purpose is asked by this bureau for the fiscal year 1916. As in other branches of the Department of Labor, recognition of excellent service might well be made by the Children's Bureau through reasonable increases of salary, but in harmony with the general policy of the department this bureau joins all the other branches of the department in withholding requests for salary increases.

Although no increase of appropriations is asked, the bureau does request a slight, though very desirable modification, in the use of its miscellaneous expense fund. It asks this in order to admit of the attendance, when specifically authorized by the Secretary of Labor, of officers and employees of the bureau at meetings or conventions of volunteer associations or public bodies interested directly or indirectly in the subject of child life. The requested modification is recommended.

GENERAL LEGISLATION.

In addition to its estimates for the fiscal year 1916 the department may find it desirable to lay before Congress requests for minor legislation enabling it the better to effect some of the purposes for which it is organized. Suggestions for general legislation also will be made as occasion occurs. The present report, however, goes no further in either respect than to recall prior recommendations as yet unacted upon, and to make such new ones as may be properly offered in general terms at this time.

PRIOR RECOMMENDATIONS.

Interstate commerce and private warfare.—In my first annual report I suggested such congressional legislation as may be constitutional with reference to "the transportation of private troops, police, or armed guards, or armed mobs, whether by employers or strikers, from one State to another under commercial contracts." The subject was presented with some fullness in that report at pages 62 to 65, to which I now refer by way of renewed recommendation. In view of the constitutional principle involved in the "white-slave" legislation of Congress, there would appear to be no longer any good reason for doubting the constitutional powers of Congress to legislate as here suggested; and in view of the private warfare that frequently results from the disturbing species of interstate commerce noted

above, there can be little question of the desirability of such legislation. I hereby again commend the subject to the attention of Congress.

Explosives near Ellis Island.—Congress having lodged no power anywhere to regulate the handling of explosives in interstate commerce *on water*, although its regulation *on land* has been lodged with the Interstate Commerce Commission, I again call congressional attention to the fact that the immigrant station at Ellis Island is for this reason in almost daily danger, and I hereby renew the recommendation of my first report upon the subject, as follows:

Were a catastrophe to occur, responsible Federal officials could not explain their own inaction by referring to the vigilance, as it has been suggested that they may do, of local authorities. Such excuses, though usually accepted before disasters, are seldom admitted afterwards. This consideration was evidently taken into account by Commissioner Williams. For, upon finding all other remedial doors closed, he advised that legislation covering the whole subject be urgently sought of Congress. This department adopts that advice and urges such legislation.

NEW RECOMMENDATIONS.

Involuntary unemployment.—Excess in the supply of labor over demand for it is a cause of labor disputes which ranks high in importance, if indeed it does not rank as *the* cause. In colloquial terms the “jobless man” puts all wageworkers at a disadvantage in bargaining with employers. The “manless job” is a corresponding colloquialism. If there were a profitable “manless job” for every “jobless man” the complete remedy for industrial disputes would be to bring the two together; but whether so complete a correspondence exists or not, no one at all familiar with the problems of seasonal employment and of accidental displacements of wage earners can doubt that it exists in some degree. There were “manless jobs” for “jobless” victims of the Salem fire, and this department helped to bring the two together; there are “manless jobs” of the seasonal kind on our farms and elsewhere to which this department has been able in some instances to bring “jobless men.” In so far as departmental work of this kind can be improved and expanded, the evils of labor disputes will be minimized; and with reference to such work the cooperation of Congress is urgently solicited.

What is needed is timely and widespread information concerning labor conditions in every part of the country. This service can be performed, as in a comparatively small way it has been performed, by cooperation between the Department of Labor and the Post Office Department—the former gathering and preparing necessary information, the latter disseminating it as it now disseminates information about the weather in cooperation with the Department of Agri-

culture—through bulletins at post offices. For best results the two departments should not be hampered by statutory rules. They should be given freedom to work out the problem between themselves through interdepartmental cooperation. Permissive legislation may be needed, however, to enable the Department of Labor to negotiate with railroads for transportation of wage earners in order to promote their welfare by meeting industrial emergencies.

Employment agencies.—It is further recommended that all employment agencies and labor exchanges engaged in interstate business be placed under the supervision of this department. Any act of Congress for that purpose would be less useful if it attempted to provide for every contingency than if broad enough in its terms to authorize the Secretary of Labor to meet emergencies as they arise.

Compensation for injuries act.—The act of May 30, 1908, entitled "An act granting certain employees of the United States the right to receive from it compensation for injuries sustained in the course of their employment," which is administered by this department, should be so amended as to minimize the hardships its terms now impose upon the employees intended to be protected by it. Under this act certain employees of the Government are entitled to a limited continuance of their pay in case of disability from injuries received without their own negligence in the course of their employment, provided the injury continues for a period of 15 days.

In practical operation none of these employees, no matter how severe the injury nor how urgent their financial necessities, can even make application for pay until the expiration of 15 days; and after application is made still further time must elapse before payment is allowed. This department facilitates the proceedings as much as possible, but the time that elapses between an accident and the beginning of payment is usually a month or more. This delay tends to cause hardships which can not be avoided under the act as it now stands, but which might be considerably lessened by allowing the application for continuance of pay to be made immediately after an accident.

Alien voters.—With reference to the work of naturalization the attention of Congress should be called to the fact that in some of the States aliens are still allowed to vote for members of the most numerous branch of the State legislature without having been admitted to citizenship. They are required only to have declared their intention to become citizens. It is therefore possible in those States, and the practice there, for aliens to vote for electors of President and Vice President of the United States, for United States Senators, and for Representatives in Congress. Not only may aliens do this, but they may do it after a two-years residence in the United States and therefore three years before they are even entitled to

become American citizens. It may be, indeed, that they may never apply for American citizenship, or, applying, may be rejected, and yet be legal voters in those States for national officials. This would seem to be contrary to the spirit of the naturalization laws and a discrimination in favor of aliens in those States as against aliens in other States. It also discriminates against the national interests of the citizens of all the States. I respectfully recommend that Congress take steps with a view to reforming this situation.

CONCLUSION.

The long agitation by wage earners of the United States for a Department of Labor in their interests culminated, as stated earlier in the present report, in the creation of this department by act of Congress of March 4, 1913. Elsewhere herein this act, entitled "An act to create a Department of Labor," is frequently referred to as the organic act of the department. Repeated references to its provisions having also been made, its text is quoted here:

TEXT OF THE ORGANIC ACT.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby created an executive department in the Government to be called the Department of Labor, with a Secretary of Labor, who shall be the head thereof, to be appointed by the President, by and with the advice and consent of the Senate; and who shall receive a salary of twelve thousand dollars per annum, and whose tenure of office shall be like that of the heads of the other executive departments; and section one hundred and fifty-eight of the Revised Statutes is hereby amended to include such department, and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department; and the Department of Commerce and Labor shall hereafter be called the Department of Commerce, and the Secretary thereof shall be called the Secretary of Commerce, and the act creating the said Department of Commerce and Labor is hereby amended accordingly. The purpose of the Department of Labor shall be to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment. The said Secretary shall cause a seal of office to be made for the said department of such device as the President shall approve and judicial notice shall be taken of the said seal.

Sec. 2. That there shall be in said department an Assistant Secretary of Labor, to be appointed by the President, who shall receive a salary of five thousand dollars a year. He shall perform such duties as shall be prescribed by the Secretary or required by law. There shall also be one chief clerk and a disbursing clerk, and such other clerical assistants, inspectors, and special agents as may from time to time be provided for by Congress. The Auditor for the State and Other Departments shall receive and examine all accounts of salaries and incidental expenses of the office of the Secretary of Labor and of all bureaus and offices under his direction, and all accounts relating to all other business within the jurisdiction of the Department of Labor, and certify the balances arising thereon to the division of bookkeeping and warrants and send forthwith a copy of each certificate to the Secretary of Labor.

SEC. 3. That the following-named offices, bureaus, divisions, and branches of the public service now and heretofore under the jurisdiction of the Department of Commerce and Labor, and all that pertains to the same, known as the Commissioner General of Immigration, the commissioners of immigration, the Bureau of Immigration and Naturalization, the Division of Information, the Division of Naturalization, and the Immigration Service at Large, the Bureau of Labor, the Children's Bureau, and the Commissioner of Labor, be, and the same hereby are, transferred from the Department of Commerce and Labor to the Department of Labor, and the same shall hereafter remain under the jurisdiction and supervision of the last-named department. The Bureau of Immigration and Naturalization is hereby divided into two bureaus, to be known hereafter as the Bureau of Immigration and the Bureau of Naturalization, and the titles Chief Division of Naturalization and Assistant Chief shall be Commissioner of Naturalization and Deputy Commissioner of Naturalization. The Commissioner of Naturalization or, in his absence, the Deputy Commissioner of Naturalization, shall be the administrative officer in charge of the Bureau of Naturalization and of the administration of the naturalization laws under the immediate direction of the Secretary of Labor, to whom he shall report directly upon all naturalization matters annually and as otherwise required, and the appointments of these two officers shall be made in the same manner as appointments to competitive classified civil-service positions. The Bureau of Labor shall hereafter be known as the Bureau of Labor Statistics, and the Commissioner of the Bureau of Labor shall hereafter be known as the Commissioner of Labor Statistics; and all the powers and duties heretofore possessed by the Commissioner of Labor shall be retained and exercised by the Commissioner of Labor Statistics; and the administration of the act of May thirtieth, nineteen hundred and eight, granting to certain employees of the United States the right to receive from it compensation for injuries sustained in the course of their employment.

SEC. 4. That the Bureau of Labor Statistics, under the direction of the Secretary of Labor, shall collect, collate, and report at least once each year, or oftener if necessary, full and complete statistics of the conditions of labor and the products and distribution of the products of the same, and to this end said Secretary shall have power to employ any or either of the bureaus provided for his department and to rearrange such statistical work and to distribute or consolidate the same as may be deemed desirable in the public interests; and said Secretary shall also have authority to call upon other departments of the Government for statistical data and results obtained by them; and said Secretary of Labor may collate, arrange, and publish such statistical information so obtained in such manner as to him may seem wise.

SEC. 5. That the official records and papers now on file in and pertaining exclusively to the business of any bureau, office, department, or branch of the public service in this act transferred to the Department of Labor, together with the furniture now in use in such bureau, office, department, or branch of the public service, shall be, and hereby are, transferred to the Department of Labor.

SEC. 6. That the Secretary of Labor shall have charge in the buildings or premises occupied by or appropriated to the Department of Labor, of the library, furniture, fixtures, records, and other property pertaining to it or hereafter acquired for use in its business; he shall be allowed to expend for periodicals and the purposes of the library and for rental of appropriate quarters for the accommodation of the Department of Labor within the District of Columbia, and for all other incidental expenses, such sums as Congress may provide from time to time: *Provided, however,* That where any office, bureau, or branch of the public service transferred to the Department of Labor by this act is occupy-

ing rented buildings or premises, it may still continue to do so until other suitable quarters are provided for its use: *And provided further*, That all officers, clerks, and employees now employed in any of the bureaus, offices, departments, or branches of the public service in this act transferred to the Department of Labor are each and all hereby transferred to said department at their present grades and salaries, except where otherwise provided in this act: *And provided further*, That all laws prescribing the work and defining the duties of the several bureaus, offices, departments, or branches of the public service by this act transferred to and made a part of the Department of Labor shall, so far as the same are not in conflict with the provisions of this act, remain in full force and effect, to be executed under the direction of the Secretary of Labor.

SEC. 7. That there shall be a Solicitor of the Department of Justice for the Department of Labor, whose salary shall be five thousand dollars per annum.

SEC. 8. That the Secretary of Labor shall have power to act as mediator and to appoint commissioners of conciliation in labor disputes whenever in his judgment the interests of industrial peace may require it to be done; and all duties performed and all power and authority now possessed or exercised by the head of any executive department in and over any bureau, office, officer, board, branch, or division of the public service by this act transferred to the Department of Labor, or any business arising therefrom or pertaining thereto, or in relation to the duties performed by and authority conferred by law upon such bureau, officer, office, board, branch, or division of the public service, whether of an appellate or revisory character or otherwise, shall hereafter be vested in and exercised by the head of the said Department of Labor.

SEC. 9. That the Secretary of Labor shall annually, at the close of each fiscal year, make a report in writing to Congress, giving an account of all moneys received and disbursed by him and his department and describing the work done by the department. He shall also, from time to time, make such special investigations and reports as he may be required to do by the President, or by Congress, or which he himself may deem necessary.

SEC. 10. That the Secretary of Labor shall investigate and report to Congress a plan of coordination of the activities, duties, and powers of the office of the Secretary of Labor with the activities, duties, and powers of the present bureaus, commissions, and departments, so far as they relate to labor and its conditions, in order to harmonize and unify such activities, duties, and powers, with a view to further legislation to further define the duties and powers of such Department of Labor.

SEC. 11. That this act shall take effect March fourth, nineteen hundred and thirteen, and all acts or parts of acts inconsistent with this act are hereby repealed.

RULES AND REGULATIONS.

Immediately following the organization of the Department of Labor under the foregoing act the Secretary promulgated an order under date of March 12, 1913, which requires "that all regulations, instructions, and decisions in force March 3, 1913, given by competent authority applicable or pertaining to or affecting the above-mentioned offices, bureaus, divisions, branches, and departments of the public service, their business, duties, powers, authority, effects, and employees shall remain in full force and effect until further ordered, subject, however, to the jurisdiction of this department and with such changes as may be necessary to carry into effect the transfer of supervisory and other powers to this department."

PRINCIPLES AND POLICIES.

In explanation somewhat of the principles and policies adopted and pursued in the administration of the affairs of this department and its branches, the concluding statement of my first annual report may be advantageously quoted here, as follows:

The Department of Labor as an executive department devoted to the just interests of wage earners has been established as one of the results of general industrial progress. Owing to well-known developments in production the relation of employer and wage earner is no longer personal or individual. Theirs is now usually a relationship between groups of employers on one side (such as corporation stockholders) and groups of their respective workmen on the other. Employers act collectively through their own chosen agents—corporation managers, factory or mine superintendents or foremen, labor brokers, or the like—who, in hiring laborers, represent collective financial interests. It is obvious that this method of employment, generally necessary for success in modern industry, may give to employers great contractual advantages over wage earners. Unless wage earners also act collectively through their own agents they are often at a practical disadvantage.

Employers who act collectively through their agents in hiring wage earners are often averse to dealing with the agents of wage earners who collectively offer their services. They desire to contract with wage earners individually. It is upon this point that labor disputes frequently spring up and become acute.

In most instances in which employers accord to workmen practical recognition of the right of collective bargaining which they themselves exercise, fair relations are maintained. Even under such conditions, it is true, unhappy disputes arise. Whether the bargaining be collective or individual, a conflict of interests may tempt either party to make exactions which the other can not concede. If employers yielded to every demand of wage earners, their business would be wrecked; if wage earners always accepted the terms that employers offer, they would suffer great injustice.

In any circumstances, differences must be expected to arise. In such cases the Department of Labor, through public agents experienced in controversies of like character, might possibly find a common ground for agreement which the disputants, in their eagerness for advantage or in the heat of their controversy, had overlooked. Difficulties of adjustment would, of course, be greatly increased if either party refused to deal or bargain with the other. But the Department of Labor, from growing experience and accumulated knowledge and skill, might learn how, even in these more difficult cases, to appeal with pacifying and prosperity-promoting effect, to the good citizenship and the wise self-interest of both parties. And, though no common ground for compromise were discovered, the Department of Labor might still be able to stimulate such conciliatory spirit as might exist on both sides, sufficiently to bring them, each none the less convinced of the righteousness of his own cause, to a manly agreement to submit their unreconciled differences to arbitration.

In any of these three ways the welfare of wage earners could be fostered while the prosperity of employers and the peace and good order of society at large were conserved. Amicable settlements be-

tween the parties themselves without mediation are manifestly first in the order of preference. Mediation comes next. Arbitration third. But any of the three is preferable to strikes or lockouts.

In its brief experience in adjusting labor disputes this department has demonstrated that they can be settled to the profit of all interests whenever both sides are fairly disposed, though they may have been widely separated in their negotiations at the start. And these demonstrations have been made under greater embarrassments than the department need be hampered with in future. Properly equipped, it should be able to make mediation progressively popular with both the employing and the wage-earning interests of the country.

The possibilities of public service by such a department are not limited, however, to settling labor disputes. Besides this work, and the administration of the immigration and naturalization laws and of statistical investigations of labor problems and the problems of child life, much may be done in the way of modifying industrial conditions that provoke distressing controversies. With the sympathetic cooperation of Congress, the Department of Labor can effectively serve industrial interests, not only without injury to any but with benefit to all.

Since its original publication the last paragraph quoted above has been justified, as may be inferred from preceding parts of the present report, especially those regarding the work of the Division of Information of the Bureau of Immigration, the beneficial service of which has been extended to all wage earners of the United States in need of employment. By systematically bringing some "jobless men" and some "manless jobs" together on a national scale, the necessary first steps will have been taken toward complete removal of what is perhaps the most potent cause of labor disputes—involuntary unemployment. Even in the taking of those first steps the modifying effect will be progressively realized from the beginning.

Of course, the labor problem can not be solved by ameliorative plans such as are here proposed unless the causes of involuntary unemployment are unbelievably superficial and vulnerable; but with seasonal variations of employment nationally adjusted, with accidental disturbances to employment nationally provided for, with individual delinquencies in respect of employment better understood by national public opinion, and with such ameliorations of industrial distress as this department is now preparing to offer, a right beginning will have been made. This work will at least clear the way for dealing effectively with the deeper-rooted and more stubborn and general causes of involuntary unemployment which thoughtful observers of modern industrial conditions seem to recognize in one form or another.

Respectfully submitted.

W. B. WILSON,
Secretary of Labor.

REPORT

OF THE

INTERSTATE COMMERCE COMMISSION.

WASHINGTON, D. C., *December 1, 1914.*

To the Senate and House of Representatives:

The Interstate Commerce Commission, in compliance with the statute, has the honor to submit herewith its twenty-eighth annual report to the Congress. Heretofore our reports have covered a period of one year, up to December 1, but owing to the provision of section 9 of the sundry civil bill, enacted in August last, requiring the substance of the annual reports to be in the hands of the Public Printer by November 15 of each year, this report in the main covers a period of eleven months, beginning December 1, 1913, and ending October 31, 1914. As to the fourth section, the twelve months ended October 31 are covered inasmuch as our last report covered a corresponding period. The figures of the division of statistics and the report as to the division of safety are for the fiscal year ended June 30, 1914.

A statement of appropriations for and aggregate expenditures by the Commission for the fiscal year ended June 30, 1914, is embodied in this report, but the statement showing the names of employees and expenditures in detail constitutes Part II of the report.

The work of the Commission continues to increase in volume, as is indicated by the subsequent pages of this report, from which it will also be noted that the Commission has during the past year been called upon by the Senate or the House of Representatives to make a number of investigations.

The Commission has organized a board of examiner-attorneys, and has also increased in strength and number its general examining corps, with a view to expediting the taking of testimony and assembling therefrom the pertinent facts. It is believed that these changes in its organization will enable the Commission to keep well abreast of its work.

INFORMAL DOCKET.

When an informal complaint is received respecting any matter within the jurisdiction of the Commission, it is taken up with carriers by correspondence in an effort to secure adjustment or satisfaction of the complaint. These complaints are given serial numbers

upon what is known as the Informal Docket of the Commission. During the past 11 months 7,600 such complaints have been received, as compared with 7,145 received during the corresponding period of the preceding year, an increase of 455.

SPECIAL DOCKET.

Upon our Special Docket, which covers applications by carriers for authority to refund to shippers amounts which have been collected in accordance with tariffs, but which, for one reason or another, were conceded to have been unreasonable, 5,514 applications have been filed during the period covered by this report. This is a decrease of 739 as compared with the corresponding 11 months of the preceding year. During the 11 months ended October 31, 1914, orders upon this docket have been issued in 5,604 cases, an increase of 1,243 over the corresponding 11 months of the preceding year. Reparation has been awarded thereunder in the sum of \$411,372.54, an increase over the same period of the preceding year of \$91,302.35. During the 11 months' period of this report 1,908 cases have been dismissed or otherwise disposed of without the making of orders for reparation, an increase of 343 over the same period of the preceding year.

FOURTH SECTION DOCKET.

During the year ended October 31, 1914, 950 special applications were filed for relief from the provisions of the fourth section, a decrease of 302 as compared with the preceding year. For the same period 1,086 fourth-section orders were issued, 265 of which were permanent in character and 821 for temporary relief. Thirty-eight applications were withdrawn. This is a decrease of 246 applications as compared with the number disposed of during the preceding year.

A brief reference to this part of our work appears in another portion of the report.

INVESTIGATION AND SUSPENSION DOCKET.

The number of proceedings instituted on this docket during the period from December 1, 1913, to October 31, 1914, inclusive, is 188, an increase of 45 as compared with the corresponding 11 months of the preceding year. One hundred and forty-seven such cases were disposed of during the period of this year above referred to. In 27 instances the tariffs under suspension were voluntarily withdrawn by the carriers; in 6 instances the protests were withdrawn and the proceedings subsequently dismissed; in 44 instances the proposed changes were allowed as filed; in 25 instances they were al-

lowed in part; in 42 instances they were disallowed; and in 3 instances proposed reduced rates were afterwards justified by the carriers and our order of suspension vacated. In 1 instance the increased rates under suspension were, after hearing, required to be canceled, but upon rehearing were permitted to become effective. During the period covered by this report the Commission declined to suspend tariffs in 205 instances, an increase of 20 as compared with the corresponding 11 months' period of the preceding year.

Further reference to this work will be found in another portion of the report.

FORMAL DOCKET.

The number of formal complaints filed during the 11 months' period covered by this report is 1,081, an increase of 131 as compared with the corresponding period of the previous year. During the same period 643 cases have been decided and 179 have been dismissed by stipulation or otherwise, making a total of 822 cases disposed of, as compared with 821 during the same period of the preceding year.

During the same period the Commission has conducted 1,461 hearings, as compared with 1,227 hearings during the corresponding period of the preceding year, in the course of which approximately 165,000 pages of testimony have been taken.

INVESTIGATIONS.

The following investigations have been concluded:

Investigation entered in response to Senate resolutions of June 10 and July 2, 1913, concerning the financial history, corporate relationships, investments, capitalization, indebtedness, and receiverships of the St. Louis & San Francisco and the Chicago & Eastern Illinois Railroad Cos. Report was made to the Senate January 20, 1914, and appears in 29 I. C. C., at page 139.

In response to Senate resolution dated July 10, 1913, investigation was instituted concerning a proposed issue of bonds by the New York Central & Hudson River Railroad Co. Report was made to the Senate April 13, 1914, and appears in 30 I. C. C., at page 47.

Responsive to Senate resolution dated February 7, 1914, investigation was instituted into the financial transactions of the New York, New Haven & Hartford Railroad Co. Report was made to the Senate on July 11, 1914, and is found in 31 I. C. C., at page 32.

Investigation instituted by the Commission on its own motion as to the rates and manner of conducting the business of the Muncie & Western Railroad. Reported in 30 I. C. C., at page 434.

Investigation initiated by the Commission with respect to the issuance, form, and substance of receipts and freight bills. Reported in 29 I. C. C., at page 496.

The following investigations, continuing in their nature, are open. Reports therein have been made as noted:

Investigation responsive to joint resolution of Congress of March 7, 1906, amended March 21, 1906, directing the Commission to investigate as to transportation by common carriers of coal or oil owned directly or indirectly by them, and as to direct or indirect ownership by carriers of coal or oil properties, and as to systems of car supply and distribution by railroads engaged in the transportation of coal or oil. Reports have been made January 25, 1907, House of Representatives Document 561, Fifty-ninth Congress, second session; January 28, 1907, House of Representatives Document 606, Fifty-ninth Congress, second session; April 28, 1908, Senate Document 450, Sixtieth Congress, first session; May 10, 1909, Senate Document 39, Sixty-first Congress, first session; and June 9, 1914, in 31 I. C. C., at page 193.

Investigation ordered by the Commission concerning rules and regulations for the transportation of dangerous articles. Regulations were prescribed effective March 31, 1912, and were revised effective October 1, 1914.

Investigation directed by the Commission in the matter of rates, practices, accounts, and revenues of express companies. Reports appear in 24 I. C. C., at page 380, and in 28 I. C. C., at page 131. Certain questions as to commodity rates and form of commodity tariffs are pending.

Investigation instituted by the Commission into the issuance and use of passes and franks and as to free passenger service. Reports appear in 26 I. C. C., at page 491, and in 29 I. C. C., at page 411.

Investigation initiated by the Commission concerning the rates, practices, and regulations applicable to the transportation of import traffic versus the rates, practices, and regulations applicable to domestic traffic.

The following investigations are pending, and as to some of them the work is near completion:

Investigation responsive to Senate resolution dated November 6, 1913, concerning the financial relations, rates, and practices of the Louisville & Nashville Railroad Co., the Nashville, Chattanooga & St. Louis Railway Co., and other carriers. This investigation is delayed by litigation over the question of the Commission's right of access to certain files of the carriers.

Investigation responsive to Senate resolution dated May 16, 1914, calling for certain information as to common control or ownership between rail carriers and water carriers.

Investigation responsive to Senate resolution dated September 28, 1914, concerning past and present conditions with respect to production, transportation, and marketing of crude petroleum.

Investigation responsive to Senate resolution dated February 2, 1914, as to alleged rebates to the United States Steel Corporation.

Investigation responsive to Senate resolution dated October 7, 1914, relative to the ownership, control, and management of the Little Kanawha Railroad Co.

Investigation instituted by the Commission concerning the service, physical condition of equipment, and property, finances, transactions, and practices of the Pere Marquette Railroad Co.

Investigation ordered by the Commission concerning service, physical condition of equipment and property, finances, transactions, and practices of the Cincinnati, Hamilton & Dayton Railway Co.

Investigation instituted by the Commission concerning the financial transactions of the Chicago, Rock Island & Pacific Railway Co. and its affiliated corporations.

Investigation ordered by the Commission concerning the divisions or allowances granted to short lines of railroad serving iron and steel industries. Original report appears in 29 I. C. C., at page 212. Supplemental report in the light of the decision of the Supreme Court in the *Tap Line cases* appears in 32 I. C. C., at page 129.

Investigation initiated by the Commission as to rates and practices involved in the transportation of live stock from southwestern points to packing-house points, and on packing-house products and fresh meats from such packing-house points. Reports appear in 22 I. C. C., at page 160; 23 I. C. C., at page 656; and 28 I. C. C., at page 332.

Investigation directed by the Commission in the matter of allowances to the Kanawha, Glen Jean & Eastern Railway and the White Oak Railway by the Chesapeake & Ohio Railway Co. and the Virginian Railway Co.

Investigation instituted by the Commission concerning rules, regulations, and practices with respect to the issuance, transfer, and surrender of bills of lading. Preliminary report is found in 29 I. C. C., at page 417.

Investigation ordered by the Commission as to the handling, icing, etc., of, and allowances in connection with the use of, private cars.

Investigation initiated by the Commission concerning rates, practices, rules, and regulations in connection with the transportation of anthracite coal in official classification territory.

Investigation directed by the Commission as to rates, practices, rules, and regulations in connection with the transportation of cement, iron ore, iron and steel and their products.

Investigation instituted by the Commission as to classification, regulations, and practices with respect to articles that are too long or too bulky to be loaded through the side doors of closed cars.

Investigation initiated by the Commission concerning the transportation of iron ore from points in Minnesota to Duluth, Minn., and Superior, Wis., for shipment beyond.

Investigation ordered by the Commission concerning rates, rules, regulations, and practices governing contracts for private telegraph and telephone wires.

Investigation directed by the Commission into the history, financial operations, rates, rules, and regulations of telephone and telegraph companies.

Investigation initiated by the Commission relative to safety appliances on equipment of railroads in Porto Rico.

Investigation ordered by the Commission concerning the revenues of rail carriers in official classification territory. Original report appears in 31 I. C. C., at page 351. The matter is now pending on further hearing.

Investigation directed by the Commission as to the reasonableness of rates on iron ore from Lake Erie ports to points in Ohio, West Virginia, and Pennsylvania, and as to the proper grouping of destination points and the relationships of the groups to one another.

Investigation instituted by the Commission concerning the practices of carriers in leasing facilities and other property to shippers.

Investigation directed by the Commission concerning the transportation of freight at released and nonreleased rates.

Investigation ordered by the Commission concerning the rules, regulations, and practices of carriers in establishing embargoes against freight shipments.

RATE SCHEDULES AND APPLICATION OF RATES.

During the 11 months ended October 31, 1914, 149,031 publications containing rates, classifications, fares, or charges were filed with the Commission. This is an increase of about 35,800 over the corresponding 11 months of the preceding year. The rate work of the Division of Tariffs has steadily increased, and through this division the Commission continues to render helpful service to State commissions, shippers, and carriers.

There has been no change in the situation stated in our twenty-fifth annual report as to the application of section 6 of the act and of the Elkins Act to telephone, telegraph, and cable companies.

DIVISION OF INQUIRY.

Between December 1, 1913, and November 1, 1914, 58 indictments have been returned for violations of the act to regulate commerce and the Elkins Act. The number of defendants, however, is much greater than this would indicate, because many of the indictments

were against two or more defendants jointly. Twenty of the indictments were against carriers or carriers' agents and 38 were against passengers, shippers, or interested parties other than carriers.

During the 11 months 80 prosecutions have been concluded. In 64 cases the defendants entered pleas of guilty or *nolo contendere*; in 4 cases juries rendered verdicts of guilty; in 1 case the jury disagreed; and 11 cases, upon motion of the Government, were dismissed. In the case of all of the indictments dismissed the defendants pleaded guilty to alternative indictments based upon the same facts.

The penalties imposed ranged in amount from \$50 to \$42,000, aggregating the sum of \$204,506 for the 11 months.

The prosecutions begun and concluded during the period covered by this report were distributed over the following states: Alabama, California, Georgia, Idaho, Illinois, Kansas, Louisiana, Michigan, Minnesota, Missouri, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Virginia, Washington, and Wisconsin.

* * * * *

FRAUDULENT CLAIMS.

The filing of fraudulent claims for loss or damage was first made an offense by the amendments of 1910 to section 10 of the act to regulate commerce. There have been several indictments under this provision of the law during the past year, including those against Davidson Bros., Morris H. Biederman, secretary of the Kavanaugh-Biederman Produce Co., both of St. Louis; the Gamble-Robinson Commission Co., at Minneapolis; and the Wisconsin Auto Sales Co. and Orton C. Collins, its sales manager, at Milwaukee. These cases will be pressed to a conclusion at an early date. Their final disposition will furnish the first judicial construction of the false-claims provision of section 10 as amended.

FAILURE OF CARRIERS TO ADJUST OVERCHARGE CLAIMS.

Under section 6 of the act it is as much an offense for the carrier to charge more than the lawful rate as to charge less, although prosecution for the former offense has not until recently been undertaken. Last year, however, indictments were secured under this provision against the St. Louis & San Francisco Railroad Co., the Adams Express Co., and the American Express Co. for charging more than the lawful rates. During the period covered by this report penalties for this offense were imposed as follows: In the eastern district of Missouri the St. Louis & San Francisco Railroad Co. offered a plea of guilty and a fine of \$500 was assessed; in the southern district of Ohio the Adams Express Co. offered a plea of *nolo contendere* and

a fine of \$1,000 was assessed; and in the western district of New York the American Express Co. offered a plea of *nolo contendere* and a fine of \$500 was assessed.

UNLAWFUL USE OF PEDDLER CARS.

Swift & Co., the Ann Arbor Railroad Co., and the Saginaw Beef Co. have been indicted for irregular practices in connection with the shipping of packing-house products in so-called peddler cars. Investigation disclosed that Swift & Co. for some years have been making shipments of packing-house products from Chicago to points located on the Ann Arbor Railroad consigned to the Saginaw Beef Co. at carload rates, although each carload shipment was distributed in less-than-carload lots at stations on the Ann Arbor Railroad intermediate to the billed destination. The result of this practice was to defeat the less-than-carload rates lawfully applicable. Accordingly, indictments were returned in the western district of Michigan against the Ann Arbor Railroad Co. for granting, and against the Saginaw Beef Co. for receiving, concessions. Both of these companies entered a plea of guilty and a fine of \$8,000 was assessed against each. An indictment was also returned in the northern district of Illinois against Swift & Co., the consignor, in 60 counts for its participation in this practice. This indictment, which is still pending, charges violations of the Elkins Act on the part of Swift & Co. by accepting concessions from the Ann Arbor Railroad Co.

FUEL COAL BILLED TO FICTITIOUS DESTINATIONS.

It is still the practice of certain carriers to have company coal originating on the lines of other carriers billed to fictitious destinations beyond the actual destinations and thus secure the transportation thereof at a division of a through rate which is less than the local rate to the point of unloading or less than the proper division of the through rate accruing to the other carrier, although the Supreme Court as far back as 1912, in *I. C. C. v. B. & O. R. R. Co.*, 225 U. S., 326, clearly indicated the unlawfulness of such a practice. Since that time indictments have been secured and substantial fines assessed against the New Orleans & Northeastern Railroad and the Seaboard Air Line for this offense. During the year indictments based upon the same practice were returned against the Lehigh & Hudson River Railroad and Morris H. Rutherford, its vice president. A total fine of \$10,000 was assessed. Two indictments were also returned against the Grand Trunk Railway Co. for this offense—one in Ohio and the other in Illinois—which resulted in fines of \$5,000 in each case. In connection with this latter indictment the O'Gara Coal Co., which shipped the fuel coal to the Grand Trunk Railway Co., was indicted

for receiving concessions. The coal company entered a plea of guilty and a fine of \$3,000 was assessed. Recent investigations by the Commission have disclosed still other instances of this practice, and these will be the subject of further indictments until the practice entirely disappears.

RELATIONS BETWEEN NEW YORK CENTRAL LINES AND THE O'GARA COAL CO.

The investigation made by the Commission of the relations between the New York Central lines and the O'Gara Coal Co. resulted in several indictments. Some of these have been settled during the year, while others are still pending. An indictment was returned in the eastern district of Illinois against the Cleveland, Cincinnati, Chicago & St. Louis Railway Co. and the Chicago, Indiana & Southern Railway Co. for granting concessions to the O'Gara Coal Co., and another indictment against the former carrier alone for discriminating in favor of this shipper. These indictments were disposed of by pleas of guilty and fines aggregating \$15,000 were assessed. In addition to indictments which were pending in the northern district of Illinois against the Lake Shore & Michigan Southern Railway Co., the Big Four Railway Co., the Chicago, Indiana & Southern Railway Co., the O'Gara Coal Co., and certain individuals, other indictments were returned in July against the above-named carriers, the O'Gara Coal Co., and certain individuals, for conspiracy and the granting and receiving of concessions. These indictments are all based upon facts developed in the course of the Commission's investigation in compliance with the terms of the Tillman-Gillespie resolution and recently announced in its report to the Senate.

FALSE DESCRIPTION OF SHIPMENTS.

The false billing of shipments of freight has been the subject of numerous investigations by representatives of the Commission. An extensive investigation in New York disclosed a large number of instances where shippers were falsely describing their shipments or falsely reporting the weights. Indictments against some 20 firms and individuals were secured in this district, which resulted in every case in a plea of guilty and the imposition of a fine. All of these indictments were based upon attempts rather than upon completed offenses, and since the attempts were in each case first attempts and pleas admitting guilt were tendered, the fines were comparatively light. Investigations have also been made in several other large shipping centers throughout the country and indictments for similar offenses have been secured, or will be sought in the near future, against shippers located in St. Louis, Kansas City, Peoria, Chicago, Minneapolis, St. Paul, and other places. In many cases investigated

it is urged in defense that the false description is the result of inadvertence. But the loss to the carriers is so great and the discrimination against competing shippers who are scrupulous in the preparation of their shipping papers is so serious that the situation appears to demand a vigorous enforcement of section 10 of the act. Having this in mind, prosecution will be undertaken in all cases brought to the attention of the Commission where shippers persist in falsely describing their shipments or falsely reporting the weights thereof.

Instances of false billing are difficult of detection except by the carriers themselves. The practice of false billing is widespread, and it has been stated that it results in the loss of millions of dollars annually to the carriers of the country as a whole. Many carriers have in the past been reluctant to call to the attention of the Commission instances where shippers have violated this and other sections of the act, influenced, no doubt, by competitive considerations. The public duty, however, that carriers and their agents owe to secure for all shippers lawful rates should outweigh the private interest which has led carriers in the past to protect offending shippers; and it is gratifying to report that a new spirit of co-operation on the part of officers and agents of numerous carriers has recently been noted, with the result that much progress is being made in stamping out the practice of false billing.

Some recent false billing cases, and more especially those involving transit privileges, have disclosed a curious misapprehension upon the part of certain shippers as to their duty under the law. For example, certain shippers, in answer to the charge that they had been misdescribing shipments, have replied, with apparent confidence in the justice of their position, that the provisions of the classification fixing the rating on the commodities shipped by them were unreasonable, and for this reason they did not feel obligated to observe them. Again, certain shippers, when advised that they were violating the provisions of a transit tariff by substitution, have replied that the provisions in question were unreasonable, that there was nothing in the law forbidding substitution, and therefore they did not feel bound by such tariff requirements. Of course, such a position is utterly untenable. The tariffs and classifications lawfully filed with the Commission are binding upon carrier and shipper alike, no matter how unreasonable any rule or rate therein may appear to any individual. The Supreme Court in the case of *T. & P. Ry. Co. v. Abilene Cotton Oil Co.*, 204 U. S., 426, held that not even a Federal court may declare an interstate rate or tariff rule unreasonable, the exclusive jurisdiction over such matters resting with this Commission. It is obvious that a shipper can not, on his own account, pass upon the reasonableness of tariff rules or regulations. If such

a rule or rate is deemed to be unreasonable, the shipper should protest by formal complaint to the Commission, and pending the determination of such complaint the only lawful course is for both shipper and carrier to observe faithfully the rules and rates as published.

THE UNLAWFUL USE OF PASSES.

Numerous prosecutions for the unlawful use of passes have been instituted. As evidencing the view of the courts as to the gravity of this offense, it is instructive to note that in the northern district of Alabama, upon a plea of guilty being entered by Aaron Wheeler to an indictment charging unlawful use of a pass from Birmingham to Memphis, the court promptly imposed a sentence of 13 months in jail. Prosecutions in pursuance of the Commission's views expressed in conference ruling 95-g, that it is unlawful for a carrier to issue passes to employees of other carriers not subject to the act, are being deferred pending a final decision of the issues involved in *United States v. Erie Railroad Co.*, not yet reported, recently decided in the southern district of New York. In this case, which was in equity, the court held, contrary to the Commission's conference ruling, that it was lawful for a carrier to issue such passes. The Government has appealed this case to the Supreme Court, where it has been advanced upon the calendar. An early decision is expected.

VIOLATIONS OF THE COMMODITIES CLAUSE.

Under the commodities clause the Pennsylvania Railroad Co. has recently been indicted in 25 counts. The case is of interest not merely because it is one of the few prosecutions undertaken for violating the commodities clause, but also because the carrier was not shown on the billing as the shipper although in fact deemed to be such. The Pennsylvania Railroad Co. owns all of the securities of the Susquehanna Coal Co. This coal company ships immense quantities of anthracite coal mined on land owned by the Pennsylvania Railroad Co. and its subsidiaries. Investigation disclosed the fact that the Pennsylvania Railroad Co. supplies the Susquehanna Coal Co. with large amounts of capital and working funds and that the affairs of the coal company are dictated entirely by the traffic officials of the railroad company. It was believed that these facts, in addition to stock ownership, evidence such commingling of the affairs of the carrier and the shipping corporation as the Supreme Court declared in *United States v. Lehigh Valley Railroad Co.*, 220 U. S., 257, would come within the prohibition of the commodities clause. The only previous criminal prosecution under the commodities clause was that against the Delaware, Lackawanna & Western Railroad Co., 231 U. S., 363. In that case, however, the carrier itself appeared on the billing as the shipper. The case is expected to go to trial in the immediate future.

LEASING OF TERMINAL FACILITIES.

The leasing of land, warehouses, and other property by carriers to interstate shippers at less than a fair rental value, or subletting such properties to shippers at less than the rental paid by the carriers themselves, or the assuming of part of the rental obligations of an interstate shipper for the purpose of influencing the routing of interstate shipments, are all deemed, in view of the Supreme Court's decision in the *Union Stock Yards case*, 226 U. S., 286, and that of the Circuit Court of Appeals in the *Hirsch case*, 204 Fed., 849, to be devices in violation of the Elkins Act. Numerous investigations have been made during the year where such violations appeared to exist. In May an indictment was returned in California against the Southern Pacific Co. for this offense. It appeared that the Southern Pacific Co. leased a warehouse for \$150 per month and then sublet it to the Redlands Golden Orange Association at a rental of \$81.35 per month. The carrier pleaded guilty and paid a fine of \$1,000 and costs. An indictment was secured over a year ago against the Wichita Falls & Northwestern Railway Co., based upon similar facts, to which the carrier pleaded guilty and a fine of \$1,000 was assessed. In July an indictment in five counts was returned against the Delaware, Lackawanna & Western Railroad Co. for granting concessions, and against the Delaware, Lackawanna & Western Coal Co. for receiving concessions. These indictments were based upon evidence that the railroad company had leased coal trestles in Buffalo valued at approximately \$200,000 to the coal company for a rental of \$48 per year. The Northern Central Railway Co., a subsidiary of the Pennsylvania Railroad Co., was recently indicted upon the following facts: The Northern Central leased coal land to the Mineral Railroad & Mining Co. in consideration of a royalty of 28 cents per ton mined. The evidence showed that this rental, which amounted to almost \$500,000 per year, has never been paid by the Mineral Railroad & Mining Co. and that the Mineral Railroad & Mining Co., through the agency of the Susquehanna Coal Co., makes large shipments of anthracite coal over the lines of the Northern Central Railway Co. Here, again, it was believed that the elements of the device condemned in the *Union Stock Yards case* for the granting of concessions were present and the indictment in 50 counts was based upon this theory. The early prosecution of similar cases involving shippers as well as carriers is contemplated.

FREE TRANSPORTATION OF PROPERTY FOR OFFICIALS OF CARRIERS.

Several instances where small railroad companies have become involved in violations of the act through the efforts of their responsible officers to discriminate in favor of business ventures in which

they were engaged have been called to our attention. Such cases might be described collectively as instances of "official graft." For example, an indictment was secured against the Spokane International Railway Co. and its vice president, Austin Corbin, 2d. Mr. Corbin, it appears, was the owner of a ranch located on the line of this carrier, which he controlled. Investigation showed that through the influence of Mr. Corbin the Spokane International Railway Co. carried shipments of grain, wood, and other commodities to and from his ranch, billing them as company material, although the property belonged to him personally. Pleas of guilty were tendered and a fine of \$5,000 was assessed against the corporation and \$5,000 against Mr. Corbin. Another indictment based on facts similar to the above was that returned against the Washington, Idaho & Montana Railway Co. and John B. Morrissey, its superintendent. Pleas of guilty were tendered by both the railroad and Morrissey and a fine of \$1,000 was assessed against each of them.

INDUCING CONCESSIONS.

One provision of section 10, as amended in 1912, has been applied for the first time in two or three recent cases, namely, that provision which makes it a misdemeanor for a shipper to induce an agent of a carrier to discriminate in his favor. Frank G. Miller, president of the Defiance Packing Co., at Defiance, Ohio, on several occasions paid small amounts to a station agent to induce him to issue bills of lading prior to the receipt of the property described thereon. Such a privilege is more favorable than that commonly accorded to shippers, and amounted to a discrimination in favor of the packing company besides being unlawful under other sections of the act. An indictment was returned upon this theory and the defendant pleaded guilty. It is believed that this provision of the act will prove serviceable in reaching offenders who secure advantages in service as substantial as if they were enjoying reduced rates, but who can not be indicted under the Elkins Act.

MAKING FALSE ENTRY IN RECORDS OF CARRIERS.

During the year several significant cases have been brought under section 20. For example, indictment was secured against William Cox, an employee of the St. Louis Southwestern Railway Co., for making false entries in certain of its station records. The defendant pleaded guilty and was fined \$2,000. Again, Glen B. Miller, a shipper, was indicted for antedating bills of lading, upon the theory that the bill of lading was a record of the carrier and the date inserted was a false entry. Miller also pleaded guilty and was fined. In the course of our examination of the correspondence files of the Southern

Pacific Co., at San Francisco, obstruction was met with on the part of this company, which asserted that while under section 20 the Commission and its examiners could require access to all "accounts, records, and memoranda" of an interstate carrier, yet the correspondence files, to which access was sought, did not come within this description. Carriers almost without exception have conceded that correspondence files were included in the term "memoranda" to which the Commission is granted access. Since section 20 makes it a penal offense for a carrier to refuse the Commission or its duly authorized agents access to its accounts, records, and memoranda, a civil suit has been brought against the Southern Pacific Co., for refusal of access, to recover a penalty of \$500 per day for a stated period during which this offense continued. The carrier demurred, the demurrer has been argued, and a decision by the district court is expected soon. The detection of violations of the law and the proof of unlawful intent on the part of common carriers and their agents is so largely dependent upon access being granted to the correspondence files of carriers that if the present law should be construed contrary to the Commission's interpretation additional legislation would be necessary in order to accomplish this end.

The above summary takes account only of the more significant investigations by the division which have culminated in prosecutions. While the work of the division consists primarily in investigating violations of the act and in preparing such cases for prosecution, only a small percentage—perhaps 20 per cent—of the matters investigated lead to prosecution. In numerous cases, while facts calling for prosecution were not disclosed, situations were presented which demanded readjustment and the division, by correspondence and conference with the interested or responsible parties, has been instrumental in bringing about better understandings between carriers and shippers. In a great number of cases opinions and suggestions have, upon request, been furnished to both carriers and shippers on questions of law involving transportation practices which were considered to be questionable in character.

Summaries of indictments returned and cases concluded between December 1, 1913, and November 1, 1914, will be found under Appendix A.

THE FOURTH SECTION.

In our annual reports for 1912 and 1913 reference was made to the applications of the transcontinental carriers for relief from the provisions of the fourth section of the act as to rates on westbound freight traffic from eastern defined territories to Pacific coast terminals and intermediate points. In our annual report for 1912 we said:

The various phases of this section of the act as last amended and the interpretation and application, as well as the constitutionality thereof, were

referred to in our last annual report to the Congress and were discussed at length before the Supreme Court last spring in the argument of the so-called Intermountain cases, which had been appealed from the Commerce Court, the latter having decided adversely to the validity of the orders of the Commission therein. After submission these cases were again assigned for argument and were recently reargued before the full court, the vacancy on the Supreme Bench having been filled since the first argument. It is expected that when they are decided the Commission will be aided by the decision in disposing of many other cases arising under this section.

The Supreme Court handed down its decision in these cases on June 22, 1914, sustaining the validity of the amended fourth section and the order of the Commission. The order had the effect of dividing the United States into five zones, described as follows:

No. 1: All that portion of the United States west of a line drawn from the Canadian boundary on Lake Superior southwest to Sioux City and thence almost due south to the Gulf of Mexico. No. 2: East of zone 1, with its eastern boundary coinciding with a line through the Straits of Mackinaw and south through Lake Michigan, continuing just east of the Illinois-Indiana line and Mississippi River to the Gulf. No. 3: East of zone 2 to a line drawn from Buffalo to Pittsburgh, thence along the Ohio River to Huntington, W. Va., thence to the Tennessee state line in extreme southwestern Kentucky, thence directly south to the Gulf, just east of the Mississippi-Alabama state line. No. 4: All territory east of No. 3 and north of a line following the West Virginia boundary to the Tennessee state line, thence east to the Atlantic. No. 5: All territory east of zone 3 and south of zone 4.

The above zones are exactly defined in *City of Spokane v. Northern Pacific Railway Co.*, 21 I. C. C., 400, 425.

From points in zone 1 the order required the carriers to observe as maximum rates to intermediate points any rates made to Pacific coast terminals. From points in zones 2, 3, and 4 the order authorized the carriers to carry lower rates to Pacific coast terminals than to intermediate points, provided the rates from points in zones 2, 3, and 4 to the intermediate points do not exceed the rates concurrently maintained to the terminals by more than 7, 15, and 25 per cent, respectively.

Subsequent to the announcement of the decision of the Supreme Court the transcontinental carriers applied to the Commission for a modification of the order which would afford them sufficient time to publish and file with the Commission, effective on statutory notice, new schedules of rates conforming to the requirements of the order. They also urged that changed conditions resulting from increased water-carrier competition justified some modification of the order as to the rates on a limited number of commodities respecting which the water competition was alleged to be particularly severe and to have necessitated relatively low rates. These commodities, comprising approximately 110 items, are said to move in large quantities by water from the east to the Pacific coast, and the rates which the rail

carriers can obtain on this traffic are alleged to be limited and controlled by the rates of the water carriers. The rail carriers urged that as to these items they should be accorded a further hearing to show that they were entitled to a greater degree of relief than was afforded by the Commission's order. Such hearing was held at Chicago on October 6, 1914, and all interested parties were afforded opportunity to present testimony. Tariffs have been filed, effective November 15, covering all other commodities, more than 400 in number, containing rates that are in conformity with the rule of the fourth section as modified by the Commission's order.

The most important work was the disposition of portions of a large number of applications of southern carriers, *Fourth Section Violations in the Southeast*, 30 I. C. C., 153. This report covered many routes and rates to points in the territory lying south of the Ohio and Potomac Rivers and east of the Mississippi River. The rates in this territory are probably affected by water competition to a greater degree than in any other large section of the country. Bounded on three sides by navigable waters, pierced by many navigable streams flowing to the ocean, to the Gulf, or to the Ohio or Mississippi Rivers, this territory presents water-competitive conditions at many points which are unlike those prevailing at intermediate points and which necessitate a shrinkage of the rail rates to such competitive points to a level materially lower than would exist were it not for the water competition there encountered. The rail carriers petitioned the Commission for authority to continue to make such rates to and from the water-competitive points as would hold to the rail lines a portion of the traffic.

The testimony offered sought to show:

1. That the lower rates to the more distant points were necessitated by water competition, actual or potential.
2. That these rates were in fact subnormal and less than fair, reasonable, compensatory rates.
3. That although subnormal, these competitive rates yielded to the rail carriers some profit over and above the actual cost of handling.
4. That the rates to intermediate points were not unreasonable as measured by the usual standards by which the Commission tests rates.

Where these four propositions were established the Commission authorized the rail carriers to continue rates to more distant points lower than to intermediate points.

The rates from New York City and related points to South Atlantic and Gulf ports and from Ohio River crossings to New Orleans and other Mississippi River crossings were found to be strongly influenced by water competition, and relief was afforded to the carriers operating routes between such points.

The rates to interior points not located upon navigable streams had in some instances been adjusted by the carriers with relation to the rates to water-competitive points with a view to enabling such interior points to distribute freight in the surrounding country in competition with water-competitive points. The adjustment of rates from many points to Atlanta, Athens, Cordele, and Rome, Ga., Birmingham, Ala., Meridian and Jackson, Miss., and other points similarly situated, lower than to intermediate points was intended to permit those cities to distribute in competition with other points located upon navigable waters. The Commission believes such adjustments of rates to be improper under the fourth section of the act, because it creates undue preference at these points, which are thereby enabled to distribute in competition with other points more favorably located, while intermediate points through which the traffic is carried are charged higher rates and are unable to distribute on equal terms with the points so favored.

The order entered in these cases denied authority to continue lower rates from Cincinnati or Louisville to Atlanta, Birmingham, Cordele, Athens, Jackson, or Meridian than to intermediate points. It also denied authority to continue lower rates via direct lines from New Orleans to the above-mentioned points than to intermediate stations. The interested carriers, in conformity with the order, are making a check of all the rates to all the points involved in this territory. A supplemental report and order, 32 I. C. C., 61, has been issued by the Commission, modifying in certain particulars the original order in such manner as to permit the establishment of a harmonious and properly graded rate structure. This new adjustment is a work of great magnitude and necessitates the reissue of nearly, if not quite, all interstate tariffs in the entire territory involved, covering more than 40,000 miles of railway.

During the year ended October 31, 1914, 950 applications were filed. During the same period 38 applications were withdrawn. During the year 1,086 fourth-section orders have been issued of which 265 were permanent and 821 were for temporary relief. Of the permanent situations passed upon, some measure of relief has been granted in 120 cases and has been denied in 145 cases. Of the 821 temporary applications acted upon, relief has been granted in whole or in part in 690 cases and denied in 131 cases.

Testimony has been heard in regard to several hundred applications filed by western carriers operating in California, Arizona, New Mexico, Washington, and Oregon, and appropriate orders will be issued thereon.

Testimony was taken with reference to the rates on sugar from New Orleans to a large territory lying south of the Ohio River. The situations and conclusions are stated in our report, 31 I. C. C., 495.

Testimony was also taken concerning the rates on sugar from New Orleans, La., California, and Colorado points to destinations in Illinois, Wisconsin, Minnesota, Missouri, Arkansas, Oklahoma, Kansas, and Texas, and the conclusions of the Commission are shown in 31 I. C. C., 511.

Substantial progress has been made in reducing the departures from the rule of the fourth section of the act.

SUSPENSION OF PROPOSED CHANGES IN TARIFF SCHEDULES.

In our previous reports referring to the provision of section 15 of the act of June 18, 1910, giving the Commission power to suspend the operation of any new tariff schedule pending investigation of the rates, charges, regulations, classifications, or practices therein contained, the methods of procedure and practice intended to insure a proper discretion in the exercise of this authority have been fully stated, and the Commission's procedure and practice in this respect remain unchanged. The number of proceedings instituted under this docket during the period December 1, 1913, to October 31, 1914 (11 months), is 188, an increase of 45 as compared with the corresponding 11 months of the preceding year. During the same period the Commission has declined to exercise that authority with respect to proposed changes in 205 cases, an increase of 20 as compared with the corresponding 11 months period of the preceding year.

In the appendix containing statement of points decided by the Commission in reported cases during the year are included cases arising upon the investigation and suspension docket. The most important of these is, however, here mentioned:

PROPOSED RATE INCREASES IN OFFICIAL CLASSIFICATION TERRITORY.

By the Mann-Elkins amendment of 1910 the Commission was authorized to suspend tariffs and investigate their propriety before they became effective.

Theretofore, and ever since passage of the act to regulate commerce in 1887, carriers had been free to establish charges under pain of making reparation if subsequently found by the Commission to be unjust or unreasonable.

Despite that freedom, they had failed to effect any general advance in any given territory.

The agreement in 1889 of certain trans-Missouri carriers for "establishing and maintaining reasonable rates" was followed in 1890 by the Antitrust act, which was held by the Supreme Court to apply to common carriers by railroad, in *U. S. v. Trans-Missouri Freight Association*, 166 U. S., 290, decided March 22, 1897.

Again, 31 carriers entered into a somewhat similar agreement, which, in turn, was held by the Supreme Court to be violative of the

antitrust act, in *U. S. v. Joint Traffic Association*, 171 U. S., 505, decided October 24, 1898.

As mentioned in previous reports of this Commission, tariffs were filed by eastern and western rail carriers in 1910, while the Mann-Elkins bill was pending, proposing certain increased rates. Under direction of President Taft the Attorney General sought and obtained in Missouri an injunction restraining the operation of the increased western rates. This led to a conference with the President by representatives of the carriers so enjoined, who agreed to withdraw the proposed increases effective June 1, 1910, and to make no general increase in rates except with the approval of the Commission. The President's message of June 7, 1910, referred to these facts and recommended that the suspending power under the bill be made effective upon its passage. This was done, and thereafter the increased rates, both eastern and western, were submitted to the Commission and postponed, and the injunction suit was dismissed.

The increased rates were not approved by the Commission for reasons stated in its reports, 20 I. C. C., 243; 20 I. C. C., 307.

In May, 1913, most of the rail carriers in official classification territory filed with the Commission a petition praying for a reopening of the former proceeding decided in *Advance in Rates—Eastern Case*, 20 I. C. C., 243.

Such reopening was deemed inexpedient, but the Commission, on June 21, 1913, ordered an investigation on its own motion into the following matters:

1. Do the present rates of transportation yield to common carriers by railroad operating in official classification territory adequate revenues?
2. If not, what general course may carriers pursue to meet the situation?

This investigation is docketed as No. 5860.

On October 15, 1913, most of the rail carriers which had joined in the petition filed tariffs embodying the so-called "5 per cent advance," the increases ranging, however, from less than 3 per cent on some traffic to 50 per cent on other, and omitting some items altogether, as, for example, rates between certain points on sugar, iron and zinc ore, and live stock.

No increase was proposed as to anthracite coal moving to Atlantic tidewater or on most of the interstate traffic in New England.

Increased rates on the same basis on intrastate traffic were proposed, but voluntarily suspended by the carriers.

The interstate increased rates were suspended and their propriety investigated by order of November 4, 1913, in *Investigation and Suspension Docket No. 333*, which was thereafter conducted in connection with No. 5860.

Like tariffs were from time to time filed and suspended by separate orders, the last having been entered May 7, 1914.

Meantime hearings commenced on November 24, 1913, and were continued until May 1, 1914, with a further hearing on May 29, 1914, as to the relations between the Baltimore & Ohio and the Cincinnati, Hamilton & Dayton.

Argument was had during the week ending May 2, 1914, and on July 29, 1914, the Commission handed down its report, 31 I. C. C., 351.

The substance of this report in the two proceedings is stated in the syllabus, as follows:

Upon the record, found that the net operating income of the carriers in Official Classification territory, considered as a whole, is smaller than is demanded in the public interest; but that no showing has been made warranting a general increase in trunk-line rates, in rail-and-lake rates, or in the rates on traffic moving between the different rate territories in Official Classification territory.

An increase by 5 per cent in the intraterritorial class and commodity rates in Central Freight Association territory approved, subject to the qualifications described in the report. The need of a general readjustment of rates in that territory discussed.

Suggestions made for consideration by all the carriers in Official Classification territory as to the methods by which they may increase their net income other than by a general rate increase. Special attention is called to the existence of many individual rates and charges apparently unremunerative.

Shortly thereafter war was declared in Europe, and on September 15, 1914, the carriers filed a petition for rehearing, which was granted by order of September 19, 1914, limiting that rehearing to—

presentation of facts disclosed and occurrences originating subsequently to the date upon which the records previously made in these cases were closed.

This rehearing was had before the Commission on October 19, 20, 21, 22, and 23, 1914, followed by argument October 29 and 30, 1914, and the matters so presented were taken under advisement.

CLASSIFICATION OF FREIGHT.

This subject was referred to in the Commission's twenty-seventh annual report, under the caption "Western classification." The view was there indicated, as it has been indicated elsewhere, that classification of freight is a question of great public interest, and that meetings of classification committees should be open to the public to a much greater extent than had theretofore been the practice.

The respective classification committees invited the Commission to have its representative sit in any or all of the committee meetings. The Commission has employed a man experienced in classification work, who, for want of a better title, has been designated "Classification agent." He attends many of the meetings of the classification committees, including the carriers' committee on uniform classification, and assists the Commission in cases and questions involving classification matters. In this way the Commission is able to keep

in close touch with and well informed as to progress in the direction of uniformity in classification matters.

There has been a substantial change in the manner of holding and conducting meetings of the several classification committees. The official classification committee until recently held but two meetings per annum; it now holds four meetings. It is therefore possible for a shipper to have a matter presented by him considered by the committee with not more than half the delay which previously occurred. The southern classification committee now holds three meetings per annum. The western classification committee is constructed and is operating along entirely new plans, somewhat recently adopted, which so far have proven to be eminently satisfactory. Instead of having a large committee, meeting occasionally, the western classification committee is now composed of but three members, who have no other duties and who sit in constant session. The members of the committee are not employed by or identified with any individual road. Under this plan matters presented are subject to no delay other than that necessary to a thorough investigation.

It seems to be generally conceded that any effort to establish uniformity in classification ratings involves changes in the ratings and rates upon practically all commodities moving under class ratings. It would be revolutionary to establish it at once, and it can be brought about only in a very gradual way. Uniformity in ratings is recognized as of substantially less importance than uniformity in other features of classification. The carriers have had a committee working constantly for several years in an effort to bring about uniformity in rules and regulations governing classification of freight, uniform description of articles or commodities subject to class rates, uniform packing or container requirements, and uniform minimum carload weights. While the work of this committee has seemed disappointingly slow, what has been done seems to have been done thoroughly, and the greater part of the recommendations made by this committee have from time to time been incorporated in the several classification publications. There has, therefore, been some steady, although slow, progress toward uniformity in the regards mentioned. Uniformity in these matters will remove by far the greater part of the causes for complaint which have so long existed. It may be said that from 50 to 65 per cent of those features of the several classification publications are now in accord with the recommendations of the uniform classification committee, and that from 80 to 90 per cent of the recommendations of the uniform classification committee have been adopted by the several classification committees.

The Commission has recommended in the past that it be given authority to require uniformity in classification matters. Bills

proposing to confer that authority were considered in the last Congress. If the Commission had that specific authority, it could be exercised in such a way as to hasten the adoption of uniformity in those features as to which uniformity is most desired and as to which uniformity is conceded to be desirable, and, at the same time, in such a way as would not injure the interests of shippers or carriers.

EXPRESS COMPANIES.

On February 1, 1914, the classification, regulations, and practices, and all of the class rates prescribed by the Commission for the express companies, became effective. The Commission authorized temporary continuance of commodity tariffs in their then existing form, provided they were so amended as to provide that if the commodity rate was in any instance higher than the second-class rate prescribed by the Commission, the second-class rate would apply. The class rates are on a block system. There was wide difference of opinion among the express people as to the practicability or desirability of stating commodity rates in the same way, due to the fact that in many instances the commodity rates apply only from known points of production. Proposed commodity tariffs are now before the Commission for consideration.

The classification, rules, regulations, and rates prescribed by the Commission have been adopted in some 40 states. The cordial disposition and effort on part of the express companies and the state commissions to harmonize the state and interstate adjustments has been most gratifying. In some instances minor modifications of the Commission's original order seemed necessary or appropriate to this end, and such modifications have been made.

The new system of rates, as also the rules, regulations, and practices prescribed, seem to be free from objections and complications and to be generally satisfactory to the patrons of the express companies. The difficulty about quoting the correct rate no longer exists. The rates now apply via the most direct routes, regardless of which express company or companies perform the transportation. The mistakes which formerly resulted in sometimes collecting charges from the consignor and again from the consignee are effectively guarded against. The collection and delivery limits are clearly defined and published in a directory so that any person can ascertain whether or not a particular point is within or without those limits. The express companies have reorganized their claim departments and marked improvement in the matter of adjusting claims for losses has been shown.

The express companies have consistently contended that the rates are too low, but they have evinced a willingness and determination

to give them a fair trial. They have co-operated cordially and helpfully in all other changes prescribed and in an effort to make their service efficient and satisfactory to their patrons.

CASES DISPOSED OF IN THE SUPREME COURT.

Since our last annual report important cases involving the validity of orders of the Commission have been disposed of in the Supreme Court of the United States. Decisions sustaining the Commission were rendered in the *Shreveport, Intermountain, Pipe Line, Pacific Coast Switching, and Pre-cooling cases*. Decisions against the Commission were rendered in the *Tap Line, Uncle Sam Pipe Line, and Florida East Coast cases*. The *Willamette Valley and Hillsdale Car Distribution cases* were dismissed upon motion of the carriers, which had appealed from decrees of the Commerce Court sustaining the Commission. In the *Tap Line cases* one of the important questions was decided in favor of the Commission, namely, that the Commission may, in order to remove a discrimination, control the amount of divisions or allowances.

Cases of general public interest are referred to below.

SHREVEPORT CASES.

Houston, East & West Texas Ry. Co. v. United States, and Texas & Pacific Ry. Co. v. United States, 234 U. S., 342.

These cases involved an order of the Commission requiring the carriers to remove a discrimination against Shreveport, La., which resulted from the action of the carriers in charging higher rates, according to distance, on interstate traffic from Shreveport than on intrastate traffic from Dallas and Houston, Tex., to destination points in Texas.

The proceeding was brought before the Commission by the railroad commission of Louisiana under direction of the legislature of that state, and had two objects: (1) To secure an adjustment of rates that would be just and reasonable from Shreveport into Texas; and (2) to end, if possible, the alleged unjust discrimination practiced by these interstate railroads in favor of Texas state traffic and against similar traffic between Louisiana and Texas.

With regard to the alleged discrimination, the Commission in its report, 23 I. C. C., 31, said:

The railroads deny that the rates out of Shreveport are unreasonable, but place their defense mainly upon the proposition that they are compelled by the railroad commission of Texas to effect the discrimination here involved. * * * There appears to be little question as to the policy of the Texas commission. It is frankly one of protection to its own industries and communities. * * * Passing, then, to the question of discrimination, has this

Commission the power to say that whatever rates an interstate carrier makes between points in Texas shall not be exceeded for the same distance under like conditions between Shreveport and Texas points? In other words, may a carrier engaged in interstate commerce discriminate against a city beyond the border of a state by imposing upon that city's traffic rates which deny its shippers access upon equal terms to the communities of an adjoining state?

This is an appeal to the powers lodged in this Commission under the third section of the act—that provision which is aimed at the destruction of undue preference and advantage. We thus meet directly the most delicate problem arising under our dual system of government. Congress asserts its exclusive dominion over interstate commerce; the state asserts its absolute control over state commerce. The state for its own purposes establishes rates designed to protect its own communities and promote the development of its own industries. These rates are adopted by the interstate carriers upon state traffic, but are not adopted upon interstate traffic. Thus arises a discrimination in favor of communities within the state, and interstate commerce suffers a corresponding disadvantage. May this Commission end such discrimination by saying to the interstate carrier, "You may not distinguish between state and interstate traffic transported under similar conditions. If the rates prescribed for you by state authority are not compensatory upon this specific traffic as to which discrimination is found, the burden rests upon you, irrespective of your obligation to the state, to so adjust your rates that justice will be done between communities, regardless of the invisible state line which divides them"? To which we are compelled to answer that the effective exercise of its power regarding interstate commerce makes necessary the assertion of the supreme authority of the National Government, and that the Congress has appropriately exercised this power in the provisions of the act to regulate commerce touching discrimination.

The Supreme Court described the situation substantially as follows:

Shreveport, La., is about 40 miles from the Texas state line and 231 miles from Houston, Tex., on the line of the Houston, East & West Texas and Houston & Shreveport companies (which are affiliated in interest); it is 189 miles from Dallas, Tex., on the line of the Texas & Pacific. Shreveport competes with both cities for the trade of the intervening territory. The rates on these lines from Dallas and Houston, respectively, eastward to intermediate points in Texas were much less, according to distance, than from Shreveport westward to the same points. It is undisputed that the difference was substantial, and injuriously affected the commerce of Shreveport. It appeared, for example, that a rate of 60 cents carried first-class traffic a distance of 160 miles to the eastward from Dallas, while the same rate would carry the same class of traffic only 55 miles into Texas from Shreveport. The first-class rate from Houston to Lufkin, Tex., 118.2 miles, was 50 cents per 100 pounds, while the rate from Shreveport to the same point, 112.5 miles, was 69 cents. The rate on wagons from Dallas to Marshall, Tex., 147.7 miles, was 36.8 cents, and from Shreveport to Marshall, 42 miles, 56 cents. The rate on furniture from Dallas to Longview, Tex., 124 miles, was 24.8 cents, and that from Shreveport to Longview, 65.7 miles, was 35 cents. These instances of differences in rates are merely illustrative; they serve to indicate the character of the rate adjustment.

The Commission found that interstate class rates from Shreveport to such Texas points were unreasonably high, and it established maximum class rates to be substituted therefor. These rates were

substantially the same as the class rates fixed by the railroad commission of Texas, and charged by the carriers, for transportation for similar distances in the state of Texas. The Commission also found that the carriers maintained higher commodity rates, according to distance, from Shreveport to the Texas points than were in force from cities in Texas to such Texas points, and that thereby an unlawful and undue preference was given to the Texas cities and a discrimination that was undue and unlawful was effected against Shreveport.

In order to correct this discrimination the carriers were directed to desist from charging higher rates for the transportation of any commodity from Shreveport toward Dallas and Houston, respectively, and intermediate points than were contemporaneously charged for the carriage of such commodity from Dallas and Houston toward Shreveport for equal distances.

In their petition in the Commerce Court to annul the Commission's order, the carriers assailed the order in its entirety, but subsequently they withdrew their opposition to the fixing of maximum class rates and these rates were put in force. The attack was continued upon that portion of the order which prohibited higher rates for carrying articles from Shreveport into Texas than those charged for eastbound traffic from Dallas and Houston, respectively, for equal distances.

The point of objection was that as the discrimination found by the Commission to be unjust arose out of the relation of intrastate rates, maintained under state authority, to interstate rates, upheld by it as reasonable, its correction was beyond the power of the Commission. The point was urged in a twofold aspect: (1) That Congress is impotent to control the intrastate charges of an interstate carrier even to the extent necessary to prevent unjust discrimination against interstate traffic; and (2) that, if it be assumed that Congress has this power, still it has not been exercised or delegated to the Commission, and hence the action of the Commission exceeded the limits of the authority which had been conferred upon it.

The Commerce Court sustained the Commission's order and dismissed the petitions, 205 Fed., 380. The carriers appealed.

In affirming the decree of the Commerce Court and sustaining the Commission's order the Supreme Court held that—

Wherever the interstate and intrastate transactions of carriers are so related that the government of the one involves the control of the other it is Congress, and not the State, that is entitled to prescribe the final and dominant rule, for otherwise Congress would be denied the exercise of its constitutional authority, and the State, and not the Nation, would be supreme in the national field.

The power to deal with the relation between intrastate and interstate rates, the court held, lies exclusively with Congress, and in the

exercise of that power Congress can remove, directly or through the aid of a subordinate body, a discrimination arising from the relation of intrastate to interstate rates.

After quoting section 3 of the act making unlawful any undue or unreasonable preference or advantage or any undue or unreasonable prejudice or disadvantage, and the proviso of section 1, to the effect that the act to regulate commerce shall not apply to commerce wholly within one state, the court held that the Commission was authorized and empowered to deal with the situation before it in these cases.

Mr. Justice Hughes, speaking for the court, concluded the decision with these words:

The further objection is made that the prohibition of section 3 is directed against unjust discrimination or undue preference only when it arises from the voluntary act of the carrier and does not relate to acts which are the result of conditions wholly beyond its control. *East Tennessee, etc., Ry. Co. v. Interstate Commerce Commission*, 181 U. S., 1, 18. The reference is not to any inherent lack of control arising out of traffic conditions, but to the requirements of the local authorities which are assumed to be binding upon the carriers. The contention is thus merely a repetition in another form of the argument that the Commission exceeded its power; for it would not be contended that local rates could nullify the lawful exercise of Federal authority. In the view that the Commission was entitled to make the order, there is no longer compulsion upon the carriers by virtue of any inconsistent local requirement. We are not unmindful of the gravity of the question that is presented when state and Federal views conflict. But it was recognized at the beginning that the Nation could not prosper if interstate and foreign trade were governed by many masters, and where the interests of the freedom of interstate commerce are involved the judgment of Congress and of the agencies it lawfully establishes must control.

INTERMOUNTAIN CASES.

United States et al. v. Atchison, Topeka & Santa Fe Ry. Co. et al., 234 U. S., 476, and *United States et al. v. Union Pacific R. R. Co. et al.*, 234 U. S., 495.

The first of these cases involved an order of the Commission granting in part and refusing in part relief from the long-and-short haul rule of section 4 on traffic shipped from the east to points between the Missouri River and the Pacific coast. The second case involved an order of the Commission granting in part and refusing in part relief from section 4 on traffic shipped from the east to Spokane and Walla Walla, Wash. In both cases the Commission established a proportionate relation to be maintained between the lower rate for the longer haul and the higher rate for the shorter haul upon the basis of certain percentages which were fixed with reference to defined rate zones.

The Commerce Court enjoined the enforcement of the orders, 191 Fed., 856. The Commission appealed. The Supreme Court reversed

the decrees of the Commerce Court and sustained the validity of the Commission's orders.

The Supreme Court considered the cases from a fourfold viewpoint, namely, (1) the meaning of section 4 as amended; (2) its constitutionality; (3) the jurisdiction of the court; and (4) the validity of the orders in the light of the statute as interpreted.

On the first point Mr. Chief Justice White, speaking for the court, said:

It is certain that the fundamental change which it (the amendment of 1910) makes is the omission of the substantially similar circumstances and conditions clause, thereby leaving the long-and-short-haul clause in a sense unqualified except in so far as the section gives the right to the carrier to apply to the Commission for authority "to charge less for longer than for shorter distances for the transportation of persons or property," and gives the Commission authority from time to time "to prescribe the extent to which such designated common carrier may be relieved from the operation of this section." From the failure to insert any word in the amendment tending to exclude the operation of competition as adequate under proper circumstances to justify the awarding of relief from the long-and-short-haul clause, and there being nothing which minimizes or changes the application of the preference and discrimination clauses of the second and third sections, it follows that, in substance, the amendment intrinsically states no new rule or principle, but simply shifts the power conferred by the section as it originally stood; that is, it takes from the carriers the deposit of public power previously lodged in them and vests it in the Commission as a primary instead of reviewing function. In other words, the elements of judgment or, so to speak, the system of law by which judgment is to be controlled remains unchanged, but a different tribunal is created for the enforcement of the existing law. This being true, as we think it plainly is, the situation under the amendment is this: Power in the carrier primarily to meet competitive conditions in any point of view by charging a lesser rate for a longer than for a shorter haul has ceased to exist, because to do so in the absence of some authority would not only be inimical to the provisions of the fourth section, but would be in conflict with the preference and discrimination clauses of the second and third sections. But while the public power, so to speak, previously lodged in the carrier is thus withdrawn and reposed in the Commission, the right of carriers to seek and obtain under authorized circumstances the sanction of the Commission to charge a lower rate for a longer than for a shorter haul because of competition or for other adequate reasons is expressly preserved; and if not, is, in any event, by necessary implication granted. And as a correlative the authority of the Commission to grant on request the right sought is made by the statute to depend upon the facts established and the judgment of that body in the exercise of a sound legal discretion as to whether the request should be granted compatibly with a due consideration of the private and public interests concerned and in view of the preference and discrimination clauses of the second and third sections.

The constitutional objection was that the fourth section constitutes a delegation to the Commission of legislative power which Congress was incompetent to make. The court held this contention to be without merit.

The principal objection to the jurisdiction of the court rested upon the assumption that the order of the Commission refusing to grant the request of the carrier made under section 4 was purely negative, and hence not subject to judicial review. The court held that "while the refusal to grant it may be in one sense negative, in another and broader view it is affirmative, since it refuses that which the statute in affirmative terms declares shall be granted if only the conditions which the statute provides are found to exist."

As to the validity of the orders under the fourth section as amended and as thus construed, the court states the carriers' objection and answers it in this language:

The main insistence is that there was no power after recognizing the existence of competition and the right to charge a lesser rate to the competitive point than to intermediate points to do more than fix a reasonable rate to the intermediate points; that is to say, that under the power transferred to it by the section as amended, the Commission was limited to ascertaining the existence of competition and to authorizing the carrier to meet it without any authority to do more than exercise its general powers concerning the reasonableness of rates at all points. But this proposition is directly in conflict with the statute as we have construed it, and with the plain purpose and intent manifested by its enactment. * * * As the prime object of the transfer was to vest the Commission within the scope of the discretion imposed and subject in the nature of things to the limitations arising from the character of the duty exacted and flowing from the other provisions of the act, with authority to consider competitive conditions and their relation to persons and places, necessarily there went with the power the right to do that by which alone it could be exerted, and therefore a consideration of the one and the other and the establishment of the basis by percentages was within the power granted.

PIPE LINE CASES.

United States et al. v. Prairie Oil & Gas Co., Uncle Sam Oil Co., Benson and others doing business under the name of the Tidewater Pipe Co., Ohio Oil Co., Standard Oil Co., and Standard Oil Co. of Louisiana, 234 U. S., 548.

These cases involved an order of the Commission requiring the operators of pipe lines to file with the Commission schedules of their rates and charges for the interstate transportation of oil by means of such pipe lines.

The Commerce Court held that the pipe lines were private, and not common, carriers; that the act to regulate commerce applies to every pipe line that crosses a state boundary; and that, thus construed, the act is unconstitutional, in violation of the fifth amendment to the Constitution of the United States, as applied to these pipe lines. The court thereupon issued a preliminary injunction against the enforcement of the Commission's order, 204 Fed., 798. The Commission appealed from this decree.

The Supreme Court reversed the Commerce Court and sustained the Commission's order as valid as to all the pipe lines involved except the Uncle Sam Oil Co. As to the latter, the decree of the Commerce Court was affirmed.

After describing the methods of the Standard Oil Co., Mr. Justice Holmes, who wrote the majority opinion, said with reference to all except the Uncle Sam Oil Co.:

Availing itself of its monopoly of the means of transportation, the Standard Oil Co. refused through its subordinates to carry any oil unless the same was sold to it or to them and through them to it on terms more or less dictated by itself. In this way it made itself master of the fields without the necessity of owning them, and carried across half the continent a great subject of international commerce coming from many owners, but, by the duress of which the Standard Oil Co. was master, carrying it all as its own. The main question is whether the act does and constitutionally can apply to the several constituents that then (prior to the amendment of 1906) had been united into a single line.

Taking up first the construction of the statute, we think it plain that it was intended to reach the combination of pipe lines that we have described. The provisions of the act are to apply to any person engaged in the transportation of oil by means of pipe lines. The words "who shall be considered and held to be common carriers within the meaning and purpose of this act" obviously are not intended to cut down the generality of the previous declaration to the meaning that only those shall be held common carriers within the act who were common carriers in a technical sense, but an injunction that those in control of pipe lines and engaged in the transportation of oil shall be dealt with as such. If the Standard Oil Co. and its cooperating companies were not so engaged, no one was. It not only would be a sacrifice of fact to form, but would empty the act if the carriage to the seaboard of nearly all the oil east of California were held not to be transportation within its meaning, because by the exercise of their power the carriers imposed as a condition to the carriage a sale to themselves. As applied to them, while the amendment does not compel them to continue in operation it does require them not to continue, except as common carriers. That is the plain meaning, as has been held with regard to other statutes similarly framed. *Atlantic Coast Line Railroad Co. v. Riverside Mills* (219 U. S., 186, 195, 203). Its evident purpose was to bring within its scope pipe lines that, although not technically common carriers, yet were carrying all oil offered, if only the offerers would sell at their price.

As to the constitutionality of the statute as thus construed, the court said:

So far as the statute contemplates future pipe lines and prescribes the conditions upon which they may be established there can be no doubt that it is valid. So the objection is narrowed to the fact that it applies to lines already engaged in transportation. But, as we already have intimated, those lines that we are considering are common carriers now in everything but form. They carry everybody's oil to a market, although they compel outsiders to sell it before taking it into their pipes. The answer to their objection is not that they may give up the business, but that, as applied to them, the statute practically means no more than they must give up requiring a sale to themselves before carrying the oil that they now receive. The whole case is that the appellees if they carry must do it in a way that they do not like.

As stated above, the Commission's order was held invalid in so far as it related to the Uncle Sam Oil Co. On this phase of the case, the court said:

There remains to be considered only the Uncle Sam Oil Co. This company has a refinery in Kansas and oil wells in Oklahoma, with a pipe line connecting the two which it has used for the sole purpose of conducting oil from its own wells to its own refinery. It would be a perversion of language, considering the sense in which it is used in the statute, to say that a man was engaged in the transportation of water whenever he pumped a pail of water from his well to his house. So as to oil. When, as in this case, a company is simply drawing oil from its own wells across a state line to its own refinery for its own use, and that is all, we do not regard it as falling within the description of the act, the transportation being merely an incident to use at the end.

Mr. Chief Justice White, while concurring in the conclusions of the court, stated that, as to the Uncle Sam Oil Co., it was his opinion that the business carried on by it was transportation in interstate commerce within the statute, but that he thought the company is not embraced by the statute, because it would be impossible to make the statute applicable to it without violating the due process clause of the fifth amendment, since to apply it would necessarily amount to a taking of the property of the company without compensation. He said:

It is shown beyond question that the company buys no oil and, by the methods which have been mentioned, simply carries its own product to its own refinery; in other words, it is engaged in a purely private business. Under these conditions, in my opinion, there is no power under the Constitution without the exercise of the right of eminent domain to convert without its consent the private business of the company into a public one.

Mr. Justice McKenna wrote a dissenting opinion, concurring in the judgment of the court as to the Uncle Sam Oil Co. and dissenting from the judgment as to the other companies, on the ground that the statute takes the property of the pipe lines without due process of law.

PACIFIC COAST SWITCHING CASES.

Interstate Commerce Commission v. Atchison, Topeka & Santa Fe Ry. Co. et al., 234 U. S., 294, and *Interstate Commerce Commission v. Southern Pacific Co.*, 234 U. S., 315.

These cases involved orders of the Commission requiring the carriers to cease and desist from exacting a charge of \$2.50 per car in addition to the through rate on traffic received or delivered on side-tracks in Los Angeles and San Francisco, Cal., where private industries are located.

The Commerce Court entered a decree suspending the enforcement of the orders until further action of that court, 188 Fed., 229, 241. The Commission appealed.

The Supreme Court reversed the Commerce Court and sustained the orders as valid. The court held that the delivery and receipt of goods on an industrial spur track within the switching limits of a city is not necessarily an additional service for which a carrier may make an additional charge, but that it is a question of fact for the Commission to determine whether such delivery and receipt is an additional service or whether it is merely a substituted service which is substantially a like service to that included in the line-haul rate. And the finding of the Commission on this point is not subject to judicial review.

PRE-COOLING CASE.

Atchison, Topeka & Santa Fe Ry. Co. v. United States, 232 U. S., 199.

This case involved two orders of the Commission, one reducing the rate on pre-cooled and pre-iced fruit from points in southern California to eastern destinations and the other requiring the carriers to maintain tariffs permitting pre-icing or pre-cooling of their shipments by shippers. "Pre-icing" or "pre-cooling" by shippers signifies the service performed by shippers in pre-cooling the fruit and placing in the bunkers of the cars the ice necessary for the preservation of the fruit during transportation.

The carriers sought to annul both orders, contending that the rate fixed was confiscatory and that shippers had no right to pre-ice. The Commerce Court sustained the Commission's orders and dismissed the petitions, 204 Fed., 647.

In affirming the decree of the Commerce Court and sustaining the validity of the orders the Supreme Court held on the question of confiscation that a rate fixed by the Commission which apparently excluded any compensation for hauling ice for refrigeration is not confiscatory when it appears, as in this case, that the rate for the fruit itself practically includes the rate for the ice. On the pre-icing feature the court held that a tariff withdrawing the privilege of pre-icing affects a rule and practice within the meaning of section 15 of the act empowering the Commission to determine whether any new practice is unreasonable; that it depends upon the facts and circumstances of each case whether icing is a part of the preparation for a shipment to be done by shippers or is a part of transportation to be furnished by the carrier; that neither the shipper nor carrier can insist upon a wasteful or expensive service for which the consumer must ultimately pay; and that, under the circumstances of this case, the shippers have the right to pre-ice their shipments.

TAP LINE CASES.

United States et al. v. Louisiana & Pacific Ry. Co. et al., Woodworth & Louisiana Central Ry. Co., Mansfield Railway & Transpor-

tation Co. et al., Victoria, Fisher & Western R. R. Co. et al., and Butler County R. R. Co., 234 U. S., 1, 29.

These cases involved certain divisions of through rates demanded by tap lines and held by the Commission to be unlawful.

After an extensive investigation of the tap lines in the lumber regions, particularly in Arkansas, Missouri, Louisiana, and Texas, the Commission held that the tap lines involved were, with respect to the proprietary lumber industries, merely plant facilities and not common carriers, although the tap lines had assumed the form of common carriers; and ordered the trunk lines to cease and desist from paying divisions or allowances to the tap lines on traffic of the proprietary industries. On nonproprietary traffic, the Commission held that the trunk lines could lawfully pay such divisions and allowances to the tap lines.

The position of the Commission was that the proprietors of the tap lines in controversy were receiving rebates from the trunk lines prior to the passage of the Hepburn Act; and that after the Hepburn Act went into effect the proprietors incorporated the tap lines as common carriers, and then received in the shape of divisions what before they had gotten as rebates. This assumption by the tap lines of the character of common carriers was held by the Commission to be merely a device.

The Commerce Court annulled the Commission's order, 209 Fed., 244. The Commission appealed.

In affirming the decree of the Commerce Court and holding the Commission's order to be invalid, the Supreme Court decided three propositions: (1) That the Commission can not hold that the assumption of the form or character of common carrier by a tap line is a mere device to shield rebates when by the public policy of the State and the National Governments, as evidenced by legislation on the subject, tap lines are recognized to be common carriers; (2) that there can be no discrimination between proprietary and nonproprietary traffic—that is to say, if a tap line is entitled to a division or an allowance on traffic carried for strangers, it is also entitled to a similar division or allowance on traffic carried for the industry of which the tap line is an adjunct; and (3) that the Commission can fix the divisions of through rates to prevent discrimination and rebating without establishing through routes and joint rates and without a disagreement on the question of divisions among the carriers. On this last point the court said:

Because we reach the conclusion that the tap lines involved in these appeals are common carriers, as well of proprietary as nonproprietary traffic, and as such entitled to participate in joint rates with other common carriers, that determination falls far short of deciding, indeed does not at all decide, that the divisions of such joint rates may be made at the will of the carriers involved and without any power of the Commission to control. That body has the author-

ity and it is its duty to reach all unlawful discriminatory practices resulting in favoritism and unfair advantages to particular shippers or carriers. It is not only within its power, but the law makes it the duty of the Commission to make orders which shall nullify such practices resulting in rebating or preferences, whatever form they may take and in whatsoever guise they may appear. If the divisions of joint rates are such as to amount to rebates or discriminations in favor of the owners of tap lines because of their disproportionate amount in view of the service rendered, it is within the province of the Commission to reduce the amount so that a tap line shall receive just compensation only for what it actually does.

FLORIDA EAST COAST CASE.

Florida East Coast Ry. Co. v. United States, 234 U. S., 167.

This case involved an order of the Commission reducing certain rates on citrus fruits and vegetables from gathering points in Florida to the basing point of Jacksonville when those rates formed parts of through rates to points beyond Jacksonville in other states.

The carrier attacked the order in the Commerce Court on two grounds, namely: (1) That there was no substantial evidence before the Commission to support a finding that the existing rates were unreasonable, and (2) that the rates fixed by the Commission were confiscatory. That court held that there was substantial, though conflicting, evidence to support the order and that there was no basis for a charge of confiscation, and dismissed the petition, 200 Fed., 797. The carrier appealed.

The Supreme Court reversed the decree of the Commerce Court and remanded the cause to the proper district court with directions to restrain the enforcement of the order on the sole ground that there was no substantial evidence before the Commission to support the Commission's finding that the existing rates were unreasonable.

WILLAMETTE VALLEY CASE.

Southern Pacific Co. et al. v. United States et al., 232 U. S., 736.

This case involved an order of the Commission reducing rates on rough green fir lumber and lath from points in the Willamette valley in Oregon to San Francisco and other points in California.

The Commission's first order herein is reported in 14 I. C. C., 61. This order was attacked by the carriers in the Circuit Court for the Northern District of California, which court certified the case to the Supreme Court. Holding that the case was not properly certified, the Supreme Court remanded the case to the circuit court, 215 U. S., 226, whereupon the circuit court entered a decree sustaining the Commission's order, 177 Fed., 963. From such decree the carriers appealed to the Supreme Court, which held that the Commission's order was invalid on the ground that the action of the Commission in reducing the rate was not an attempt on its part to fix a

reasonable rate, but was rather in the nature of a decree enforcing an equitable estoppel between the parties. The Supreme Court did not find that the rate fixed was too low, but simply held that the Commission had no power to reduce a rate on the theory that a carrier is estopped to charge a higher rate after maintaining a lower rate for many years and leading shippers to believe that the lower rate would be continued, 219 U. S., 433.

Another hearing was had in the case and a large amount of testimony taken, but practically no new facts developed before the Commission, which, expressly excluding from consideration any matter of estoppel, again reduced the rates, 21 I. C. C., 389. Thereupon the carriers attacked the new order in the Commerce Court, contending that, in disregard of the Supreme Court's decision, the Commission allowed the same views to prevail. The Commerce Court held that in making its second order the Commission had not attempted to enforce any equitable estoppel and sustained the order as valid, 197 Fed., 167. The carriers again appealed to the Supreme Court.

On March 17, 1914, the appeal of the carriers was dismissed in the Supreme Court upon motion of the carriers.

HILLSDALE CAR DISTRIBUTION CASE.

Pennsylvania R. R. Co. v. Interstate Commerce Commission et al., not yet reported.

This case involved an order of the Commission requiring the carrier to cease and desist from a discrimination which results from certain rules of the Pennsylvania Railroad pertaining to the distribution of coal cars.

The carrier attacked the order in the Commerce Court on the ground that it was invalid because it related to cars for intrastate as well as interstate shipments. That court held that "we see no reason to doubt the authority of the Commission to make these orders, even though they are intended to have the application and effect which petitioner appears to apprehend," 193 Fed., 81. The carrier appealed to the Supreme Court.

On October 13, 1914, the carrier's appeal in the Supreme Court was dismissed upon motion of the carrier.

* * * * *

DIVISION OF CARRIERS' ACCOUNTS.

At the date of the last report a general revision of the accounting classifications for steam railways, electric railways, and express companies was in progress. This work has been completed and the revised classifications were made effective July 1, 1914.

This general revision has been in the direction of development rather than change in principle. Additional accounts have been

provided, instructions have been amplified, item lists extended, and the terminology simplified and made more descriptive. The grouping of accounts has also been so changed as better to show their relations. In the classifications of operating expenses for steam railways, electric railways, and express companies accounts have been provided for depreciation upon several classes of fixed property as well as equipment. The carriers are required to report to the Commission the bases used by them in calculating depreciation. The revenues and expenses of certain auxiliary, or "outside" operations of steam railways, heretofore shown separately in income account, are now combined with those of the main operations to which they are incidental, although they are still chargeable to separate primary accounts. The increasing use of electricity as an auxiliary in the operation of steam railways has been recognized by the addition of several new accounts.

A new feature of some importance is a change in the basis of division between property accounts and operating expense accounts of steam railways in accounting for expenditures for the replacement of property retired from service. Heretofore, except in the case of equipment, the amount chargeable to operating expenses has been the "cost of replacing in kind." Through the operation of this rule changes in prices of labor and material have been absorbed in operating expenses and have not affected the property accounts. Under the current rules the cost of retired property is deducted from property accounts, and the cost of the new is added, the effect being that property accounts reflect the actual cost of the new property. By this change the treatment of the larger units of fixed property is brought into harmony with that of equipment. Owing to practical difficulties, however, any increase in the cost of replacing without betterment the smaller units of property, such as ties and rails, is still reflected in operating expenses and does not affect property accounts.

The system of accounts for electric railways has been completed by the addition of classifications of income, profit and loss, and balance-sheet accounts, and that of express companies by the addition of income and profit and loss accounts. A system of accounts for small telephone companies has been prepared and will become effective January 1, 1915. The task of revising and completing the system of accounts for pipe-line companies has also been entered upon.

The bulletin of accounting decisions under the former classifications for steam railways will be revised to conform to the new classifications and will be issued with additional cases. A similar revision of decisions under the electric railway classifications is in preparation.

During the preparation of both revised and new classifications the assistance of the carriers was secured, as in the past, through the issuance of the classifications in tentative form for criticism, and through conferences between representatives of the division of carriers' accounts and of the carriers. The Commission again acknowledges the helpful co-operation of the carriers in this work.

While much progress has been made during recent years in the practice of accounting by carriers, it is necessary to bear in mind that much remains to be done. A correct statement of assets and liabilities is not reached through recording merely the receipts and payments of money. So far as possible, account should be taken of the changes in values as they progress. Depreciation is not yet receiving adequate treatment by carriers. Repair expenses, which should be current, do not always appear in the period in which they accrue.

The board of accounting examiners was established under authority of the Hepburn amendment, for the principal purpose of assisting the Commission in enforcing the observance of its accounting regulations through the inspection of carriers' accounts. For the past three years, however, there has been an increasing demand on the division's accountants to assist in the investigation of formal cases before the Commission. During the past year the field force of the division has been largely employed in such investigations, and as a result the field examination of carriers' accounting practices has been curtailed.

An important administrative change in this division has been made since our last report. When organized, and for two years thereafter, the entire force of the division had its headquarters at Washington. On July 1, 1910, a branch office was opened at Chicago. During the past year additional branch offices have been established at New York, Philadelphia, Pittsburgh, St. Paul, St. Louis, and San Francisco. Another will be opened at New Orleans. A force of resident examiners is attached to each branch office. An advantage expected to accrue from this change is increased efficiency through better acquaintance with local conditions at important railroad centers and in their vicinity. It is also expected that a substantial saving in expenses will be effected.

CLAIMS AGAINST CARRIERS.

In our twenty-fifth and twenty-seventh annual reports reference was made to some of the difficulties surrounding the investigation and adjustment of freight claims, and more particularly to the need of improvement in the forms used and in the methods and rules of procedure which govern the investigation and adjustment of claims. The Commission has continued, through joint conferences with carriers represented by the Freight Claim Association, and shippers

represented by the National Industrial Traffic League, to help bring about such improvement. One of the results of these joint conferences was the approval by both carriers and shippers of standard forms for use in presenting claims against carriers. The Commission also has approved the forms and has recommended their general use and adoption. Already their use has become quite general. These forms should do much to obviate the differences of opinion which have existed relative to the evidence necessary to support claims when presented. To these differences of opinion have been attributable a large part of the delays in settling claims, and much of the friction and bad feeling so often existing between carriers and shippers.

Another result was an inquiry as to the time necessary to adjust claims. This inquiry was pursued through the medium of special reports required of steam carriers having annual revenues exceeding \$1,000,000. The mileage represented by these carriers is 220,062, or approximately 90 per cent of the total steam railway mileage of the United States.

There follows a tabulation of the claims presented to carriers and the number of these claims adjusted by them during the period of six months ended June 30, 1914.

Claims presented.

	Loss and damage.	Over-charge.	Total.
Interstate:			
Local.....	379,067	117,445	496,512
Interline.....	864,317	401,722	1,266,039
Total.....	1,243,384	519,167	1,762,551
Intrastate:			
Local.....	397,902	120,937	518,839
Interline.....	98,495	45,111	143,606
Total.....	496,397	166,048	662,445
Grand total.....	1,739,781	685,215	2,424,996

Percentage of "interstate" claims, 73; percentage of "intrastate" claims, 27.

NOTE.—The term "local" pertains to claims in connection with traffic handled by one carrier; "interline," handled by two or more carriers.

Number of the above claims adjusted.

Character of claims.	Manner of adjustment.			
	Paid.	Declined.	With-drawn.	Total.
Loss and damage.....	1,240,837	107,687	20,062	1,368,586
Overcharge.....	439,204	78,603	9,039	526,846
Grand total.....	1,680,041	186,290	29,101	1,895,432
Percentage.....	88.6	9.8	1.6	

Division of time in which adjustments were accomplished.

Period of adjustment.	Loss and damage.	Overcharge.	Total.	Percentage relation of each period.
After receipt:				
Within 15 days.....	769,786	266,444	1,036,230	55
Between 15 and 30 days.....	248,869	115,437	364,306	19
Between 30 and 60 days.....	202,897	90,226	293,123	16
Between 60 and 90 days.....	89,562	33,550	123,112	6
Between 90 and 120 days.....	41,297	15,846	57,143	3
Between 120 and 180 days.....	16,175	5,343	21,518	1
Grand total.....	1,368,586	526,846	1,895,432	100

NOTE.—There remained unadjusted at the end of the six-months period 529,564 claims, or 22 per cent of the claims received. This does not mean that these claims have been in the hands of carriers for six months; it means simply that at the end of a selected period 22 per cent of the claims received during that period were carried over to the next period.

It is not possible to make comparison with previous periods, as figures therefor are not available. These figures indicate, however, that, provided proper investigations have been made, claims are now being adjusted with a degree of promptness that deserves commendation. There would seem to be a basis for the assertion made by carriers that claims not settled within 15 or 30 days are of a special or peculiar character, requiring extended investigations, or are improperly presented. It is believed that the information obtained from these special reports will serve to stimulate carriers to even greater efficiency in the handling of claims.

Our twenty-fifth annual report contains a brief reference to the amounts paid by steam carriers for loss and damage to freight during each of the years 1908, 1909, and 1910, and to the downward trend of the payments from 1908 to 1910. This downward trend was taken as indicating that the heavy drain upon the revenues of carriers represented by these payments had been checked, and as further indicating that there would continue to be a gradual reduction. That such a development did not follow is evidenced by the fact that the payments increased from \$21,941,232 in 1910 to \$30,885,454 in 1913, an increase of 40.8 per cent. Freight revenue increased 14.2 per cent in the same period. An idea of the vast increase in the payments for loss and damage during recent years may be gained from the fact that in 1900 carriers paid on this account \$7,055,622, and in 1913, \$30,885,454, an increase of 337 per cent. In the same period freight revenue increased 109 per cent.

As intimated in our twenty-seventh annual report, claims for loss and damage present opportunities for discrimination, the adjustment of many such claims being largely a matter of judgment which is frequently influenced by the volume of traffic controlled by particular claimants. A concession or an advantage created through the medium of a claim for loss and damage is, moreover, more difficult

to detect and to establish than a direct concession from the lawfully published rate. The reason for this is obvious: Loss and damage claims often involve various questions of law and of fact, and there is no invariable or inflexible rule by which these questions can be determined. The interpretation of legal principles relative to questions of negligence and liability differs in different localities, a fact which augments the uncertainty of the application of the law and adds to the difficulties of determining the validity of such claims.

Competition for traffic plays no mean part in the adjustment of claims for loss and damage. The examinations of the accounts of carriers disclose many cases which justify the belief that certain claims of this character are paid not because the carriers feel that the claims are valid, but because claimants threaten to divert traffic unless claims are paid, and because other carriers allow similar claims. Under the act to regulate commerce carriers are charged with the duty of determining the correctness and lawfulness of claims before they may be paid, and in order to avoid discriminations it is obvious that all claims must be adjusted solely upon their merits and without regard to the traffic controlled by particular claimants.

Loss and damage to freight represents an economic waste, and the payments therefor increase the cost of transportation. For these and other reasons it follows that it is to the interest of the carriers, the shippers, and the general public that loss and damage to freight be reduced to a minimum. This can be accomplished only by ascertaining and removing the causes. Steps in this direction have been taken by the American Railway Association and the Freight Claim Association, and the Commission will lend its support to these efforts.

DIVISION OF STATISTICS.

The work of the division of statistics has been substantially similar in character to the work of that division in prior years. It includes the preparation of report forms, the analysis and correction of annual and other statistical reports from railways and other common carriers engaged in interstate commerce, and the compilation and publication of such matters therefrom as seem of general public interest.

The Commission has always considered it inadvisable to make publication of statistical matters in permanent form until after the reports on which such publications are based have had, as far as practicable, the benefit of careful scrutiny and correction of errors. The demand for the prompt publication of returns for steam roads seems to be largely met by the bulletins of revenues and expenses pertaining to Class I roads, which are published monthly.

About a year ago the division of statistics began the issuance of a daily bulletin of revenues and expenses of carriers by railway. This was chiefly for the benefit of the press. The bulletin shows the cumulative revenues and expenses of the more important railways as reported for the latest current month for which reports are received. The Commission's rules require that the reports of steam railway companies for a particular month be mailed on or before the last day of the following month and in consequence about the 25th of each month reports for the preceding month begin to be filed in this division. As soon as enough reports are on hand to make a compilation of significance the daily bulletin showing comparative figures for the particular month for which the reports are made and also for the period from July 1 to the close of that month, as well as for the corresponding month and period of the previous year, is prepared and copies of it are given to the press and the public. During the year a bulletin compiled from the monthly reports of express companies also has been regularly made public for a similar purpose. Express companies, however, need a longer time for the preparation of their monthly reports than railway companies and are allowed three months in which to make them.

An abstract for the public, based on compilations for the Twenty-sixth Annual Report on the Statistics of Railways in the United States for the year ended June 30, 1913, was issued under date of July 1, 1914, and the copy for the complete report was sent to the printer within a short time thereafter. It is expected that this report will be published about the 1st of January.

The preparation of the Preliminary Abstract of Statistics of Common Carriers for the year ended June 30, 1914, the fourth in the series, was begun as soon as annual reports were received from the respective companies included in the report, so that its publication could be effected at the earliest practicable date. This abstract is based on the reports of carriers as rendered, thus being preliminary and subject to revision. It includes important financial and operating statistics of individual steam railway companies having annual operating revenues above \$1,000,000, and of the Pullman Co. It also includes a statement of the income account and profit and loss account of the principal express companies in the United States.

For revised figures relating to railways and to express companies, reference should be made to the Commission's annual volumes issued under the titles "Statistics of Railways in the United States" and "Statistics of Express Companies in the United States."

In accordance with custom, there are presented in Appendix C various figures compiled from annual and other periodic reports of carriers recently filed with the Commission.

SEPARATION OF OPERATING EXPENSES.

During the year the Commission has further considered the matter of railroad operating costs. In the disposition of rate cases before it the Commission has always considered the cost of performing various services in so far as the proper statistics were available and applicable. Such application has been limited because of a lack of information, due to the fact that the Commission in recent years has not required carriers to regularly apportion their operating expenses to the various branches of the railroad service.

Prior to 1894 carriers were required to make a general separation of operating expenses between freight and passenger services in their annual reports. The summaries of this information appeared annually in the Statistics of Railways in the United States. In 1894, because the method employed proved defective, this requirement was abandoned. Since 1894, however, much progress has been made in the general subject of cost accounting, both in manufacturing and in transportation. Many railways now apportion their expenses by classes of service on their own initiative. From 60 to 70 per cent of the operating expenses of railway companies can be apportioned in a fairly satisfactory manner between freight and passenger services.

In view of these developments the Commission decided to reconsider the matter of requiring carriers to apportion their operating expenses. After extensive preliminary inquiries a hearing was held in Washington May 2, 1914. A diversity of views was developed. Some carriers desired the Commission to prescribe fixed formulas for apportioning all operating expenses, in the belief that the results would be helpful in rate litigation. Others contended that the results would prove of little use either to the carriers or commissions and would not justify the extra expense which careful cost accounting would entail. Various other considerations were advanced for and against the plan. Following this hearing and on June 13, 1914, the Commission issued a report upon the subject, entitled *In the Matter of the Separation of Operating Expenses*, 30 I. C. C., 676. This report requires class 1 roads, embracing carriers whose revenues exceed \$1,000,000 per annum, to separate their operating expenses between freight and passenger services on certain prescribed bases. The division of statistics, in cooperation with committees representing the American Railway Association and the Association of American Railway Accounting Officers, is at present at work in devising a plan for accomplishing the results contemplated which will not be unduly burdensome to the carriers and which will at the same time yield statistical data of a fundamental character of value alike to the carriers and to the Commission. Upon the completion of this preparatory work a proper order will be entered.

DIVISION OF SAFETY.

The Commission has grouped its work in administration of the safety-appliance and kindred acts in a division of safety. A detailed report of the work of this division is published separately.

SAFETY-APPLIANCE ACTS.

During the fiscal year ended June 30, 1914, 171 employees were killed and 2,694 injured in the coupling and uncoupling of cars. The corresponding figures for the two preceding years were 192 deaths and 3,236 injuries in 1912 and 195 deaths and 3,361 injuries in 1913. Casualties resulting from overhead and side obstructions and from falling from and getting on and off cars occasioned during the past fiscal year 643 deaths and 16,428 injuries to employees. These figures for the year ended June 30, 1912, were 704 deaths and 15,721 injuries; and for the year 1913, 721 deaths and 18,257 injuries.

During the fiscal year 257 cases, involving an aggregate of 1,020 violations of the safety-appliance acts, were transmitted to the several United States attorneys for prosecution. Cases comprising 149 counts were tried in court, of which 121 counts were decided in favor of the Government. Cases involving 43 counts were argued in the Circuit Courts of Appeals, 17 of which were decided in favor of the Government and 26 for the defendant. The decisions of the Circuit Court of Appeals on these 26 counts will be taken to the Supreme Court on writ of error. Carriers confessed judgment during the year as to 483 counts. Penalties aggregating \$78,700 were assessed.

In its annual reports for 1912 and 1913 the Commission adverted to the insufficiency of inspection by the carriers in certain instances at terminals and repair points. From the number of violations reported for prosecution it is evident that cars continue to be moved away from repair points in a defective condition, when slight repairs would render them conformable to the statute. The need of adequate repair facilities at all essential points is obvious, and the desirability of carriers requiring from responsible employees at such points a working knowledge of the safety-appliance acts and of the orders of the Commission can not be too strongly emphasized.

The period in which equipment other than freight cars was to have been made conformable to the standards fixed by the Commission's order of March 13, 1911, pursuant to the act of April 14, 1910, has now expired, and conditions generally in this respect are satisfactory. As to freight cars, however, the number equipped as compared with the number to be equipped is disproportionately small, and only the exercise of the greatest diligence will enable the carriers to standardize their freight equipment within the interval that yet remains.

The Commission has caused to be prepared and issued as a public document a Digest of Decisions published prior to October 1, 1914, in which the Federal safety-appliance and hours-of-service acts have been construed.

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ASH-PAN ACT.

During the fiscal year ended June 30, 1914, three cases involving three violations of the ash-pan act were transmitted by the Commission for prosecution, and defendants confessed judgment as to three counts. Penalties in the sum of \$1,600 were assessed.

Practically all locomotives subject to the ash-pan act have been equipped as contemplated by the statute, and the principal duty now devolving upon the carriers in this respect is to maintain in an operative condition the devices already installed.

HOURS-OF-SERVICE ACT.

During the fiscal year ended June 30, 1914, 233 cases, involving an aggregate of 2,871 violations of the hours-of-service act, were transmitted to the several United States attorneys for prosecution. During the same period the carriers confessed judgment as to 1,785 counts. Of the 592 counts which went to trial, 395 resulted in favor of and 164 adversely to the Government, and 33 are still pending decision. Of the cases originally decided in favor of defendants, 34 counts have been appealed by the Government, and 38 of the 395 counts originally decided in favor of the Government have been appealed by defendants. Of 121 counts argued in the Circuit Courts of Appeals 98 were decided in favor of the Government. Penalties aggregating \$162,422 were assessed.

The analysis of carriers' monthly hours-of-service reports, exhibiting the number of instances and the causes of excess service, as described in the last annual report of the Commission, has been continued through the past fiscal year, and the summaries developed show a marked reduction in the volume of excess service.

During the fiscal year 1,194 railroads filed complete reports. Of these, 739 certified each month under oath that no excess service has occurred on their respective lines. The remaining 455 carriers reported an aggregate of all classes of excess service of 165,305 instances in which employees were on duty for longer periods than those permitted by the statute.

The published tables show an aggregate of all classes of excess service reported during the year of 163,192 cases, a reduction of 136,761 instances from those exhibited by the summaries for 1913. The number of instances reported during the past fiscal year, however, appears to be still unduly large, particularly those caused by

hot boxes, defective couplers, and miscellaneous car defects, and it is suggested that a more rigid inspection of equipment at terminals and repair points by the carriers would effect a substantial diminution in the number of reportable cases.

Attention is again directed to the diversity of opinion in the various courts as to the proper penalties to be assessed for violations of the hours-of-service act. A bill is now pending in Congress which, if passed, should remedy this situation.

Attention is also directed to the considerable number of instances of excess service attributed to "broken drawbars," "leaky flues," "hot boxes," and other circumstances ordinarily to be expected in the operation of trains, and the Commission respectfully renews its former recommendation that the proviso in section 3 of the hours-of-service act be so amended as clearly and specifically to define the causes which shall excuse the carriers' retention of employees on duty for periods longer than those prescribed, and the extent to which such retention shall be justified.

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INVESTIGATION OF ACCIDENTS.

Sixty-three train accidents were investigated by the Commission during the year ended June 30, 1914. Forty of these accidents were collisions and 23 were derailments. They caused the death of 169 and the injury of 2,134 persons. The collisions investigated were responsible for 108 deaths and 1,162 injuries, and the derailments caused 61 deaths and 972 injuries. Thirteen of these collisions, causing 39 deaths and 412 injuries, occurred where the block system was in use, and 24 collisions, involving 64 deaths and 713 injuries, occurred under the train-order system. Three collisions, causing 5 deaths and 7 injuries, occurred in yard movements where the system of train operation was not a factor.

Collisions caused by improper flagging continue to be a prominent feature of these investigations. Eight of the 40 collisions investigated were due to this cause. In these 8 collisions 45 persons were killed and 386 injured. Attention has been called to the indefiniteness of the flagging rule in force on many roads and the practice of employing inexperienced men as flagmen. A noticeable effort has been made on a number of roads to improve the situation in this respect, but there is still abundant opportunity for betterment. In one collision, due to improper flagging, which caused 14 deaths and 294 injuries, the flagman at fault had been employed only 24 days and was entirely without previous railroad experience. He had not been examined on the rules, and apparently no effort had been made to ascertain his fitness to perform the duties imposed upon him. When men of such little experience are employed as

flagmen, and are permitted to work without any examination to determine their knowledge of the rules, it is unreasonable to assume that they will properly perform their duties, and accidents due to improper flagging may be expected to occur.

The record of accidents investigated shows a considerable decrease in the number of collisions due to the failure of enginemen to obey the indications of block signals. There were but 2 collisions of this nature during the past year, as against 7 the previous year. The 2 collisions herein noted occurred in connection with the movement of high-speed passenger trains on a road equipped with the most modern system of automatic block signals. The enginemen at fault were trusted employees of long experience, one of whom was killed in the collision resulting from his mistake. As previously noted, no adequate explanation can be given for these lapses from duty by trusted and competent men, who in many cases suffer death as a consequence of their error. It is to be hoped that the investigations authorized by the Congress, mentioned in another part of this report, may lead to the development and use of some system of automatic train control to be used in connection with existing systems which will eliminate this class of accidents.

The inherent weakness of the train-order system continues to manifest itself as a prominent feature of the accident record. In 13 of the 40 collisions investigated it appeared that 7 were caused by trains encroaching upon the time of superior class trains and 6 were caused by the failure of trainmen to obey orders. In these 13 collisions 26 persons were killed and 179 injured. Danger of collisions under the train-order system is often increased by the failure of railroad operating officers to employ safeguards provided for by the rules. On most roads where the train-order system is used the rules require that an order establishing a meeting point for opposing trains shall be sent simultaneously to all the trains involved, and also, whenever practicable, to the operator at the designated meeting point, thus providing a check against the possibility of trainmen forgetting or misunderstanding the order. This check, provided by the so-called "middle order," is an important element of safety in the movement of trains on single-track lines, but on some roads the rule which requires it to be used is not observed. Two of the collisions herein discussed, causing the death of 5 persons and the injury of 3, could have been prevented by an observance of the rule, and in both cases the placing of a middle order was practicable. Investigation developed the fact that on one of the roads the rule was observed only when passenger trains were involved, and that on the other road it was not observed at all and had not been enforced for several years previous to this collision, although it had never been rescinded.

Improvement is to be noted in the matter of inspection and supervision of the work of train-service employees. On many roads where scant attention formerly was paid to such matters efforts are now being made to insure that employees are familiar with their duties and competent to perform them, and strict obedience to rules is being insisted upon. This improvement is largely due to the work of safety committees in bringing employees and operating officers closer together and inducing them to cooperate for the attainment of safe operating conditions. Such work can not be too highly commended. When conducted along lines calculated to inspire confidence in the minds of employees it can not fail to awaken their enthusiasm and command their earnest support, thus insuring a decrease in the number of avoidable accidents.

Attention is again directed to the need of legislation requiring the standardization of operating rules. That uniformity in rules which is necessary to safety can only be secured by the compulsion of Federal legislation. The efforts of the American Railway Association to standardize operating rules, while commendable, have not been wholly effective, for the reason that the association has no power to compel individual roads to observe its recommendations. The situation is similar to that which led to the passage of Federal legislation enforcing uniformity in the application of safety appliances to cars and engines. With proper rules and operating practices, uniformly applied and enforced on all interstate roads, a decrease in railway accidents may be expected.

In previous annual reports the Commission has called attention to bad conditions of track and roadway which are responsible for many derailments. No material improvement in such conditions during the period covered by this report is noticeable. Six of the 23 derailments investigated were either directly caused or greatly contributed to by bad track. These six derailments were responsible for 33 deaths and 492 injuries, while in all derailments investigated 61 persons were killed and 972 injured. It thus appears that in the derailments investigated bad track conditions were responsible for 54 per cent of the deaths and more than 50 per cent of the injuries due to such derailments from all causes. In at least three of these derailments, occurring in widely separated sections of the country, the track conditions were absolutely unsafe for the operation of trains at speed, and it did not appear that on the roads involved any proper system of track inspection was maintained, or that adequate facilities, in the way of material and labor, for keeping track and roadway in good condition were furnished.

Attention is again called to the lack of definite information respecting track and rail conditions under the increased wheel loads due to the use of heavier locomotives and cars and higher rates of

speed. Investigations of accidents caused by broken rails and fractured car wheels have confirmed the need for further investigation to determine with accuracy the stresses to which rails, car wheels, and track structures are subjected under existing conditions of service, and to establish safe working limits for their use.

The Commission renews the recommendation contained in its last annual report respecting legislation requiring the use of steel cars. Experience has demonstrated that steel cars are superior to wooden cars from the standpoint of safety, and the use of wooden cars in front of or between steel cars in high-speed trains should be prohibited.

INVESTIGATION OF SAFETY DEVICES.

Under the provisions of the appropriation act of October 22, 1913, the Commission was authorized and directed to investigate and report regarding the use and necessity of block signal systems, appliances for the automatic control of railway trains and any devices intended to promote the safety of railway operation, and under certain conditions to conduct experimental tests. In December, 1913, the Commission assigned to its division of safety the duty of carrying out these directions of law, and for the purpose of conducting the necessary investigations an engineer-physicist and a signal engineer were employed; other employees of the Commission were also assigned to this work, the organization for carrying on these investigations being completed in February, 1914.

A circular dated December 10, 1913, setting forth the procedure necessary to be followed in submitting devices and systems for consideration, was prepared and distributed. At the time this work was taken up the plans of many devices and systems intended to promote the safety of railway operation which had been presented for consideration were already in the files of the Commission, and since then plans of a considerable number of other devices have been submitted. Detailed information regarding the examination of these appliances is contained in the separately published report of the chief of the division of safety.

Information has been received regarding experiments with train-control devices on several railroads, and in some instances official tests have been made. Within the past year the American Railway Association has adopted certain definitions and requisites for installation of automatic train-control systems and has specified certain adjuncts which may be used in connection with such systems.

A tabulation of statistics pertaining to block signals, interlocking plants, and the telegraph and the telephone for transmission of train orders as issued on the railroads in the United States was published by the Commission under date of January 1, 1914. As shown

therein, the total length of railroad line operated under the block system at that time was 86,736.9 miles. The increase during the year 1913 was 2,787.1 miles.

In previous reports the Commission has recommended that railroads be required to adopt the block system.

INSPECTION OF LOCOMOTIVE BOILERS.

The third annual report of the chief inspector of locomotive boilers shows, in addition to the report for the year 1914, a comparative summary of the work during the three-year period. It is believed that sufficient time has elapsed since the law has been in force to permit the benefits which may reasonably be accredited to its operation to be fairly shown.

The following table shows in concrete form the inspection work performed each year since the passage of the law; and the decrease in the percentage of locomotives reported defective indicates in a measure the improvement in conditions:

	1914	1913	1912
Locomotives inspected.....	92,716	90,346	74,234
Found defective.....	49,137	54,522	48,768
Percentage found defective.....	52.9	60.3	65.7
Ordered out of service.....	3,365	4,676	3,377

This table does not show fully the improved conditions resulting from the operation of the law, because, as pointed out in the 1913 report, attention was first concentrated on the more serious defects, so that the number of fatalities might be reduced; therefore, the improvement is more accurately indicated by the reduction in the number of casualties resulting from boiler defects, as shown by the following table:

	1914	1913	1912
Accidents.....	555	820	856
Decrease from previous year..... per cent..	32.3	4.2	
Decrease from 1912..... do.....	35.1		
Killed.....	23	36	91
Decrease from previous year..... per cent..	36.1	60.4	
Decrease from 1912..... do.....	74.7		
Injured.....	614	911	1,005
Decrease from previous year..... per cent..	32.6	9.3	
Decrease from 1912..... do.....	38.9		

The facts shown in the above tables are so conclusive that it is not necessary to enlarge on the information contained therein.

In addition to the inspection work above shown, a careful investigation has been made of every accident reported in accordance with the provisions of the locomotive boiler inspection law. In each case

active steps were taken to remedy any conditions or practices which could be shown to have caused or contributed to the cause of the accident; and this action has materially assisted in reducing the accident list.

Four hundred and six applications for extension of time for removal of flues, in accordance with the provisions of rule 10, were filed, of which number 67 were withdrawn by the railroad companies before an investigation was made. An investigation was made in each of the remaining 339 cases, in 264 of which the full extension asked for was granted, in 21 an extension for a portion of the time asked for was allowed, and 54 applications, or 16 per cent of the total number, were refused after an investigation.

Rule No. 2 of the locomotive boiler inspection rules provided that—

The lowest factor of safety to be used for all locomotives in service or under construction on or before January 1, 1912, will be fixed after investigation and hearing, and after the expiration of the time allowed for filing specification cards.

In accordance therewith a careful investigation, extending over the two-year period allowed for filing specification cards, was conducted by the division of locomotive boiler inspection. This investigation showed that 11,153 locomotives, or about 17 per cent of the total number for which specification cards were filed, had a factor of safety below 4, being divided as follows:

4,407 with a factor between $3\frac{1}{2}$ and 4.

2,531 with a factor between $3\frac{1}{2}$ and $3\frac{1}{4}$.

2,039 with a factor between $3\frac{1}{4}$ and $3\frac{1}{2}$.

1,082 with a factor between 3 and $3\frac{1}{2}$.

1,094 with a factor below 3, on some of which the factor was found to be below 2.

This factor is based on the ultimate tensile strength of the material; the elastic limit, at which point the metal takes a permanent set and never recovers, is usually about one-half of the ultimate tensile strength; therefore, the imperative need of increasing the factor to a point which might reasonably be expected to provide adequate protection against flaws or hidden defects in the material, poor workmanship, and undiscovered deterioration, becomes apparent.

All of these points were carefully considered at a conference held at the office of the chief inspector of locomotive boilers on April 28 and 29, 1914, at which the railroad companies and their employees were represented, and suitable amendments to the rules, providing for improved methods of construction and increased safety of operation, were agreed upon.

It was also found that there were many locomotives in service with excessive stresses on stays and braces, therefore a maximum

allowable stress for stays and braces was included in the amendments to the rules.

In preparing these amendments the practice established by the Commission in previous cases of a similar character was followed, and a series of time limits was provided for the making of the necessary changes, so arranged as to require the more serious conditions to be promptly remedied and allow more time for other necessary improvements in cases where the conditions, while improper, were not so likely to cause accidents. Therefore the amended rules as approved by the Commission on June 9, 1914, will not materially add to the expense of maintenance, as the required improvements can, in most instances, be made when the locomotives are shopped for regular repairs.

Two formal appeals from the decision of inspectors, as provided in section 6 of the law, were filed during the year, in both of which a subsequent investigation resulted in the decision of the inspector being sustained.

No prosecutions for violations have been sought during the year, as the beneficial effect of the law and rules is being generally recognized by railroad officials, most of whom show a disposition to comply with the requirements and to co-operate in bringing about improved conditions. On two or three of the larger roads, however, and on several smaller ones, conditions and practices appear to indicate that we may be unable to obtain a full compliance with the requirements of the law without resorting to the courts.

During the year 2,141 defects to locomotives for which existing laws do not provide a remedy, 1,155 of which were defective wheels, were reported to this division by inspectors and brought to the attention of the railroad officials, with request that proper repairs be made. In the interest of safety this work will be continued by our inspectors.

PANAMA CANAL ACT.

That provision of section 11 of the Panama Canal act approved August 24, 1912, amending section 5 of the act to regulate commerce, contains the following:

From and after the first day of July, nineteen hundred and fourteen, it shall be unlawful for any railroad company or other common carrier subject to the act to regulate commerce to own, lease, operate, control, or have any interest whatsoever (by stock ownership or otherwise, either directly, indirectly, through any holding company, or by stockholders or directors in common, or in any other manner) in any common carrier by water operated through the Panama Canal or elsewhere with which said railroad or other carrier aforesaid does or may compete for traffic or any vessel carrying freight or passengers upon said water route or elsewhere with which said railroad or other carrier aforesaid does or may compete for traffic; * * *

Jurisdiction is hereby conferred on the Interstate Commerce Commission to determine questions of fact as to the competition or possibility of competition,

after full hearing, on the application of any railroad company or other carrier. Such application may be filed for the purpose of determining whether any existing service is in violation of this section and pray for an order permitting the continuance of any vessel or vessels already in operation, or for the purpose of asking an order to install new service not in conflict with the provisions of this paragraph. * * *

If the Interstate Commerce Commission shall be of the opinion that any such existing specified service by water other than through the Panama Canal is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that such extension will neither exclude, prevent, or reduce competition on the route by water under consideration, the Interstate Commerce Commission may, by order, extend the time during which such service by water may continue to be operated beyond July first, nineteen hundred and fourteen. * * *

Provided. Any application for extension under the terms of this provision filed with the Interstate Commerce Commission prior to July first, nineteen hundred and fourteen, but for any reason not heard and disposed of before said date, may be considered and granted thereafter.

As stated in our last annual report, the Commission, under date of December 2, 1913, issued a circular advising all carriers intending to present applications under the provisions of this act to do so not later than March 1, 1914. In view, however, of the provision of the act last above quoted, permitting the filing of such applications at any time prior to July 1, 1914, the carriers continued to present them until within a few days of that date. It having become apparent to the Commission that it would be impossible to investigate prior to July 1 all of the cases being presented, particularly since so many of them were not being filed far in advance of that date, the Commission found it necessary to determine what was its duty and authority as to the status after July 1 of the petitioning carriers with respect to the water lines covered by their applications. After careful consideration of the matter in an effort to give effect to all of the provisions of this act above quoted, and it being obvious that any other course would probably result in the summary discontinuance, on July 1, of more or less boat-line service, to the inconvenience of the public, the Commission, on April 14, 1914, in a conference ruling announced its conclusions as follows:

Section 5 of the act as amended by the Panama Canal act prohibits common carriers subject to the act to have after July 1, 1914, any interest, directly or indirectly, in any common carrier by water, or any vessel carrying freight or passengers, with which said carrier does or may compete for traffic.

The manifest purpose of this law is to bring about discontinuance of common ownership or control of water carriers except in those instances in which, after investigation and hearing, it is found that such operation is in the interest of the public, or of advantage to the convenience and commerce of the people, and neither excludes, prevents, nor reduces competition on the route by water. The act does not in specific words authorize the continuance of such common ownership or control beyond July 1, 1914, pending decision of the Commission on application relative thereto, but it is provided that any application filed before July 1, 1914, may be considered and granted thereafter. It is not con-

ceivable that the Congress intended that the service should be withdrawn from the public on July 1, 1914, if for good and sufficient reasons it had been impossible for the Commission to determine the questions presented in the application before that date. Although the language employed is different, it seems that the legislative intent was similar to that expressed in the amended fourth section of the act, and in the safety-appliance acts. The Commission, therefore, interprets the amendment to section 5 of the act as contemplating and authorizing a continuance of any existing common ownership or control after July 1, 1914, between rail and other carriers and water carriers not traversing the Panama Canal until such time as the Commission has passed upon the application relative thereto, provided such application is filed with the Commission prior to July 1, 1914.

There have been filed 58 applications, embracing 79 water-line interests. It has been found that much preliminary investigation is necessary to a full disclosure of the past and present relations between the rail carriers and the water lines in which they are interested, and the control or influence exercised by the former over the latter, in order that the Commission may dispose of the questions involved in these applications in justice to the carriers and the public, according to the manifest purposes of the statute. These investigations are well under way. Hearings have been had in various parts of the country interested in and affected by these questions, and others are assigned for early dates. It is hoped that during the coming year disposition may be made of most if not all of these cases.

DIVISION OF VALUATION.

The manifest purpose of the act of March 1, 1913, is to secure a complete and accurate inventory and valuation of the properties of common carriers subject to the act to regulate commerce.

Broadly speaking, the present work of the Commission under this act falls under two general heads: First, ascertainment of the cost of reproduction of the property new, and also less depreciation; second, ascertainment of the original cost of the property to date, together with certain information as to its financial and corporate history. The first is largely engineering, the second accounting. The act also requires certain specific information as to lands, rights of way, and terminals. The value of these is a considerable part of the total value of a railway property. It follows that the work of the division of valuation is done through three subdivisions—engineering, accounting, and land. There is also a branch of the division of law which deals with questions arising in the general conduct of this work.

ENGINEERING.

In the last report of the Commission it was stated that the country had been divided into five districts, each embracing about 50,000 miles of railroad, and that an engineer with an assistant engi-

neer had been placed in charge of the engineering work in each district.

For the purpose of the initial work a single railroad was selected in each district, the maps of which were in fairly good condition and which was thought to offer a variety of problems. The roads selected, together with the approximate length of each, are given below:

District.	Road.	Length.
		<i>Miles.</i>
Eastern.....	Norfolk Southern.....	900
Southern.....	Atlanta, Birmingham & Atlantic.....	600
Central.....	New Orleans, Texas & Mexico.....	175
Western.....	Texas Midland.....	122
Pacific.....	San Pedro, Los Angeles & Salt Lake.....	1,000

At first a single field party was put at work upon each road. From time to time additional field parties were organized, and the forces have been gradually increased until, beginning with the month of September, eight full parties were employed in each district. A regular field party is composed of nine men, as follows: One assistant field engineer, one recorder, two computers, one instrument man, one rodman, one head chainman, one rear chainman, and one tape-man.

Surveys upon the Texas Midland were completed in May, and upon the New Orleans, Texas & Mexico soon afterwards. The final assembled results of the surveys of these properties have, however, only recently been completed. This delay was occasioned partly by the necessity of drawing up the requisite forms and determining the manner in which the information should be put together and partly by the delay in obtaining the printed forms when prepared.

After the completed inventory of the physical property of a railroad has been assembled it is necessary to apply the proper prices to the respective units. The determination of these unit prices is now in progress. They can only be ascertained through an extensive examination of the accounts of railroads and from other sources.

Field work has been finished upon the San Pedro, Los Angeles & Salt Lake Railroad and substantially finished upon the Atlanta, Birmingham & Atlantic. Upon the Norfolk Southern it will be finished about December 1. Assembled inventories will therefore be completed for all these roads in the near future.

The engineering work has been extended to other railways in all the districts. In the eastern district the most of the parties are at work upon the Boston & Maine. With the coming of cold weather these parties, as well as those now engaged upon the Norfolk Southern, will be transferred to the lines of the Pennsylvania south of Philadelphia and to the Winston-Salem branch of the Norfolk &

Western. In the southern district work is now in progress upon the Central of Georgia and upon the Cleveland, Cincinnati, Chicago & St. Louis Railroads; in the Central district, upon the Elgin, Joliet & Eastern and the Chicago & Eastern Illinois. It is proposed to begin work upon the lines of the Illinois Central south of the Ohio River about December 1. In the western district parties are now engaged upon the Kansas City Southern and the branches of the Great Northern and the Minneapolis, St. Paul & Sault Ste. Marie in North Dakota. During the winter these parties will be moved to the lines of the Chicago, Rock Island & Pacific in Kansas, Oklahoma, and Texas. In the Pacific district, the Western Pacific and the Great Northern in Montana are now under survey. It is expected that the work upon the Western Pacific can be completed without interruption, but with the advent of winter the parties now engaged in Montana will be transferred to the Southern Pacific between El Paso and Los Angeles. When the Western Pacific is completed work will be begun upon the Atchison, Topeka & Santa Fe in Arizona.

The 8 parties now at work in each district cover an aggregate of from 1,500 to 1,700 miles per month. It is believed that these same parties, by reason of increase in efficiency with experience, and through the development of new methods, will in the not distant future be able to cover an appreciably increased mileage. It seems advisable not to increase the present force until methods of computing and assembling have been so far perfected that the result of these surveys can be placed upon the assembly sheets as fast as they are made. Beginning about January 1 next, the most economical conduct of this work will probably require the increase of these field parties to from 16 to 20 in each district. The present general organization should be able to support 20 field parties, and it is evident that cost decreases in proportion as surveying parties can be multiplied without increase in overhead expenses.

The preparation of inventories of telegraph and telephone lines has also been begun.

ACCOUNTING.

At the head of the accounting subdivision is a supervisor of accounts, to whom a district accountant having immediate charge of the accounting work in each district reports.

The act requires the Commission to ascertain and report in detail the original cost to date of each piece of property. About the time that engineering work was begun in the field, accountants were put to work upon the accounts of the railroads selected for initial valuation in the various districts, with instructions to obtain, as far as

possible, all the facts of an accounting nature called for by the act. Final reports upon the Texas Midland and the New Orleans, Texas & Mexico have been received. Work upon the other three roads has not been completed.

The Commission has not as yet been able to examine these reports with sufficient care to form a final opinion, but they seem to show that the attempt to "report in detail as to each piece of property" the original cost to date, has involved an expenditure out of all proportion to the value of the results. The Commission is giving careful attention to the accounting branch of its valuation work, and will later report to the Congress its conclusions.

LAND.

At the head of this subdivision is a supervisor of land appraisals who has under him a land attorney in each of the five districts. The organization also includes an assistant attorney and land appraisers in each district.

Up to the present time the effort of this subdivision has been partly directed to determining the original cost of the right of way and ascertaining what lands have been obtained by gift or donation. Deeds have been examined for the purpose of noting any conditions which may have affected the original cost.

The land appraisers are also gathering data for the determination of the value of the land, such as appraisals for taxation purposes, sales of adjoining lands and lands similarly situated, and the opinions of persons in the locality believed to be competent to express such opinion.

RECOMMENDATIONS.

The pressing need of adequate quarters for the housing in one building of all the employees connected with the work of the Commission in Washington, for the reasons of economy and efficiency explained in our previous annual reports, in our judgment justifies us in again urging the construction by the Government, at as early a date as practicable, of a suitable building for this purpose, or that the Commission be authorized to enter into a lease arrangement or contract covering a term of years for the construction of such a building by other parties. We are now under the necessity of renting outside buildings for the purposes of our work of valuing railroad properties and the inspection of locomotive boilers, and we are convinced that such an arrangement as above suggested would be much less expensive to the Government than the renting from year to year of necessary space.

For the reasons stated in our last and previous annual reports we renew our recommendations therein contained, to the effect—

That, for the purpose of uniformity and to prevent injustice, there should be provided by law one period—in our opinion three years—for the beginning of all actions relating to transportation charges subject to the act.

That there should be appropriate and adequate legislation upon the subject of control over railway capitalization.

That there should be legislation to make explicit and certain the authority of the Commission to examine all correspondence, files, indexes, and other papers and documents retained by carriers subject to the act.

That the penalty for violations of the hours-of-service act be changed to a fixed and definite sum, or that a minimum penalty of \$100 be established instead of the penalty of “not to exceed \$500,” as now provided.

That the use of steel cars in passenger-train service should be required, and that the use in passenger trains of wooden cars between or in front of steel cars should be prohibited.

STATEMENT OF APPROPRIATIONS AND AGGREGATE EXPENDITURES FOR THE INTERSTATE COMMERCE COMMISSION FOR THE FISCAL YEAR ENDED JUNE 30, 1914.

Sundry civil act June 23, 1913—For salaries of commissioners	\$70,000.00	
For salary of secretary	5,000.00	
		\$75,000.00
Sundry civil act June 23, 1913—For all other authorized expenditures necessary in the execution of laws to regulate commerce ..		950,000.00
Sundry civil act June 23, 1913—To further enable the Interstate Commerce Commission to enforce compliance with section 20 of the act to regulate commerce as amended by the act approved June 29, 1906, including the employment of necessary special agents or examiners		300,000.00
Sundry civil act June 23, 1913—For the payment of all authorized expenditures under the provisions of the act of Feb. 17, 1911, “to promote the safety of employees and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their locomotives with safe and suitable boilers and appurtenances thereto”		220,000.00
Sundry civil act June 23, 1913—To enable the Interstate Commerce Commission to keep informed regarding compliance with acts to promote the safety of employees and travelers upon railroads, including the employment of inspectors		150,000.00
Deficiency act Oct. 22, 1913—To enable the Interstate Commerce Commission to investigate in regard to the use and necessity for block-signal systems and appliances for the automatic control of railway trains		25,000.00

Deficiency act Oct. 22, 1913—Deficiency act May 25, 1914—To enable the Interstate Commerce Commission to carry out the objects of the act approved Mar. 1, 1913, providing for a valuation of the several classes of property of carriers-----	\$489, 627. 09
Total-----	<u>2, 209, 627. 09</u>

Amounts expended under appropriations for the fiscal year ended June 30, 1914:

As salaries to commissioners and secretary-----	\$69, 944. 44
All other authorized expenditures-----	926, 932. 74
Examination of accounts, act approved June 29, 1906-----	205, 520. 22
Locomotive-boiler inspection, act approved Feb. 17, 1911-----	202, 326. 23
Safety appliance-----	134, 274. 83
Block signal and train control-----	9, 019. 49
Valuation-----	456, 565. 32
	<u>2, 094, 583. 27</u>

Unexpended balance of appropriations June 30, 1914:

Salary of commissioners-----	5, 055. 56
All other authorized expenditures-----	23, 066. 60
Examination of accounts, act approved June 29, 1906-----	4, 480. 44
Locomotive-boiler inspection, act approved Feb. 17, 1911-----	17, 673. 77
Safety appliance-----	15, 725. 17
Block signal and train control-----	15, 980. 51
Valuation-----	33, 061. 77
	<u>115, 043. 82</u>
Total-----	<u>2, 209, 627. 09</u>

All of which is respectfully submitted.

JAMES S. HARLAN
 JUDSON C. CLEMENTS
 EDGAR E. CLARK
 CHARLES C. MCCORD
 BALTHASAR H. MEYER
 HENRY C. HALL
 WINTHROP M. DANIELS

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